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Department of
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Forest Service
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December 2012



Bell Island Geothermal Leases

Final Supplemental Environmental Impact Statement and Record of Decision

Ketchikan-Misty Fjords Ranger District, Tongass National Forest
Ketchikan Gateway Borough, Alaska



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File Code: 1950

Date: November 29, 2012

Dear Public Participant:

I would like to inform you that the Tongass National Forest has completed its environmental analysis for the Bell Island Geothermal Leases which are located in the Ketchikan-Misty Fiords Ranger District, of the Tongass National Forest. This analysis is documented in the enclosed Final Supplemental Environmental Impact Statement (SEIS). You are receiving this document because you have expressed interest in being on the Forest mailing list or through your direct participation of the process.

Also enclosed is the Record of Decision (ROD) which discusses the decision I have made and the selected alternative.

The primary issues and rationale for completing a supplemental document to the Final Programmatic Environmental Impact Statement (PEIS) for Geothermal Leasing in the Western United States (USDA 2008) were twofold. The Bell Island lease areas were not recognized as being within an inventoried roadless area, and with that omission, the effects of applying the non-discretionary Roadless Area Stipulation (PEIS 2008) needed to be evaluated and disclosed.

A Notice of Intent to prepare a Draft SEIS was published in the Federal Register on May 25, 2011. The Draft SEIS was released for a 45-day comment period on May 8, 2012 to all parties that had requested a copy, to anyone who had requested information on the project, and the Ketchikan-Misty Fiords Ranger District mailing list. This mailing included 62 individuals, agencies and groups. In addition, an informational meeting and Subsistence Hearing were held June 16, 2012, at the Ketchikan-Misty Fiords Ranger District Office. A total of three comment letters were received, all three were supportive of the proposal. These letters are contained in Appendix B in the Final SEIS.

The Final SEIS has been completed for the Bell Island Geothermal Leases. Three editorial changes were made to this Final SEIS based on the review of the Draft SEIS by both the public and the Forest Service. The first editorial change was made correcting Lake Tyee to Tyee Lake and affected Figure 1-1 page 3, and in the text on pages 10 and 17. The second change made was on page 7 where the word Ranger was omitted from the Ketchikan-Misty Fiords Ranger District.

A third modification was due to a policy change on the review process for activities in Roadless Areas. On May 30, 2012, the Secretary of Agriculture's Memorandum 1042-156 requiring



review and approval of certain activities in Roadless Areas expired. On May 31, 2012, in a letter from the Chief of the Forest Service the Chief clarifies a new process for review of certain activities in Roadless Areas. The new policy states, "Except as noted below, the Chief will review all projects involving road construction or reconstruction and the cutting, sale, or removal of timber in those areas identified in the set of inventoried roadless area maps contained in the Forest Service Roadless Area Conservation, Final Environmental Impact Statement Volume 2 dated November 2000." Stated in the Draft SEIS, the Secretary of Agriculture would be reviewing and approving any activities within the Bell Island Geothermal Leases project area. As of May 31, 2012, the reviewing official will be the Forest Service Chief. This change involves two revisions in the document. The first revision is found in the Summary Background (page ii) and the second change is to Chapter 3 Introduction (page 15).

After review of the PEIS and the Final SEIS, I find the documents to be consistent with the National Environmental Policy Act (NEPA) procedures of the USDA Forest Service and meet the agency's NEPA requirements. I also find the additional site-specific analysis of the Inventoried Roadless Area, local tribal consultation and the Subsistence Hearing provide a basis for my decision concerning consent to lease for geothermal activity for the three pending lease applications.

I am adopting the PEIS in its entirety including appendices and supporting documents and the Final SEIS as the analytical basis for this Record of Decision (40 CFR 1506.3). The decision is not subject to administrative appeal because no comments were received during the comment period expressing concern and I am not modifying the preferred alternative identified in the Draft SEIS (36 CFR 215.12(e)(2)).

I would like to thank everyone for their participation in this project, particularly those who provided written comments on the project or attended the public meetings. I believe that my decision provides the best balance of management activities to respond to the purpose and need of the project and the issues expressed.

The document can also be accessed on-line at: <http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=35026>

Sincerely,

A handwritten signature in black ink, appearing to read "Forrest Cole", written in a cursive style.

FORREST COLE
Forest Supervisor

cc: Jeff DeFreest

**Bell Island Geothermal Leases
Final Supplemental Environmental Impact Statement and
Record of Decision
Tongass National Forest
Ketchikan-Misty Fiords Ranger District
Ketchikan Gateway Borough, Alaska**

Lead Agency:	USDA Forest Service
Cooperating Agencies:	Bureau of Land Management, Anchorage Field Office Alaska State Office
Responsible Official:	Forrest Cole Federal Building, 648 Mission Street Ketchikan, AK 99901
For Information Contact:	Sarah Samuelson 8510 Mendenhall Loop Road Juneau, AK 99801 (907)789-6274

Abstract: The Forest Service is conducting this analysis to supplement the Programmatic Environmental Impact Statement (PEIS) prepared jointly by the Bureau of Land Management (BLM) and the Forest Service. The PEIS examined, in part, the potential environmental effects associated with consenting to three pending geothermal lease applications within the Ketchikan-Misty Fiords Ranger District of the Tongass National Forest. This Final Supplemental Environmental Impact Statement (SEIS) displays the actions proposed by the Ketchikan-Misty Fiords Ranger District, addressed the inventoried roadless area (IRA) status of Bell Island and a small portion of the adjacent mainland on the Cleveland Peninsula, the potential effects of any consent determination on the roadless area characteristics, and values of this IRA (the North Cleveland IRA). It also addressed the potential effects on subsistence and the social and economic conditions in the Ketchikan Gateway Borough, the area most likely to be affected by any geothermal activity within the Bell Island leases. Two alternatives are considered in the Draft SEIS. These alternatives include the No Action Alternative (Alternative A) and the Proposed Action (Alternative B). Under the No Action Alternative, the Forest Service would not consent to the three pending geothermal leases. Under the Proposed Action, the Forest Service would consent to the three pending geothermal leases, with appropriate stipulations. Based on the analysis contained in the SEIS and public comments on the Draft SEIS, the Forest Service has selected Alternative B as the Preferred Alternative.

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Record of Decision
Bell Island Geothermal Leases
U.S. Forest Service
Ketchikan-Misty Fjords Ranger District
Tongass National Forest
Ketchikan Gateway Borough, Alaska

DECISION

Based on my review of the Programmatic Environmental Impact Statement (PEIS) and the Supplemental Environmental Impact Statement (SEIS), I have decided to implement Alternative B, in which the Forest Service will provide a consent determination to the Bureau of Land Management (BLM) for the issuance of the three pending lease applications (AK084543, AK084544 and AK084545) on Bell Island and the adjacent mainland (Figure 1). This consent determination was based on the reasonably foreseeable development (RFD) scenario identified in Volume II, Chapter 11 of the PEIS, and will incorporate pertinent stipulations from Volume I of the PEIS, including the Roadless Area Stipulation.

BACKGROUND

In 2008, in response to the Energy Policy Act (EPA) of 2005, the Bureau of Land Management and the Forest Service, in cooperation with the Department of Energy (DOE), jointly prepared a Final PEIS titled Geothermal Leasing in the Western United States. The PEIS provides a framework to facilitate the BLM and Forest Service efforts regarding geothermal lease applications that were pending as of the EPA of 2005, as well as future determinations for projects on BLM and National Forest System (NFS) lands.

The PEIS incorporated two scopes for analysis. The first scope included an analysis of programmatic procedures to allocate lands as open or closed for leasing for the development of geothermal resources, a review of applicable existing land use plans, and identified stipulations for pending and future geothermal leases (Volume I of the PEIS). The second scope covered the site-specific analysis of 19 backlogged lease applications that were grouped and analyzed in seven distinct geographic areas (Volume II of the PEIS). Both of these analyses considered a RFD scenario for geothermal development on Federal lands. The geothermal RFD scenarios serve as a basis for analyzing environmental impacts resulting from future leasing and development of Federal geothermal resources within the western United States over the next 20 years. This scenario assists land management agencies to better determine the probable level of disturbance and the likely effects on the environment should subsequent development occur.

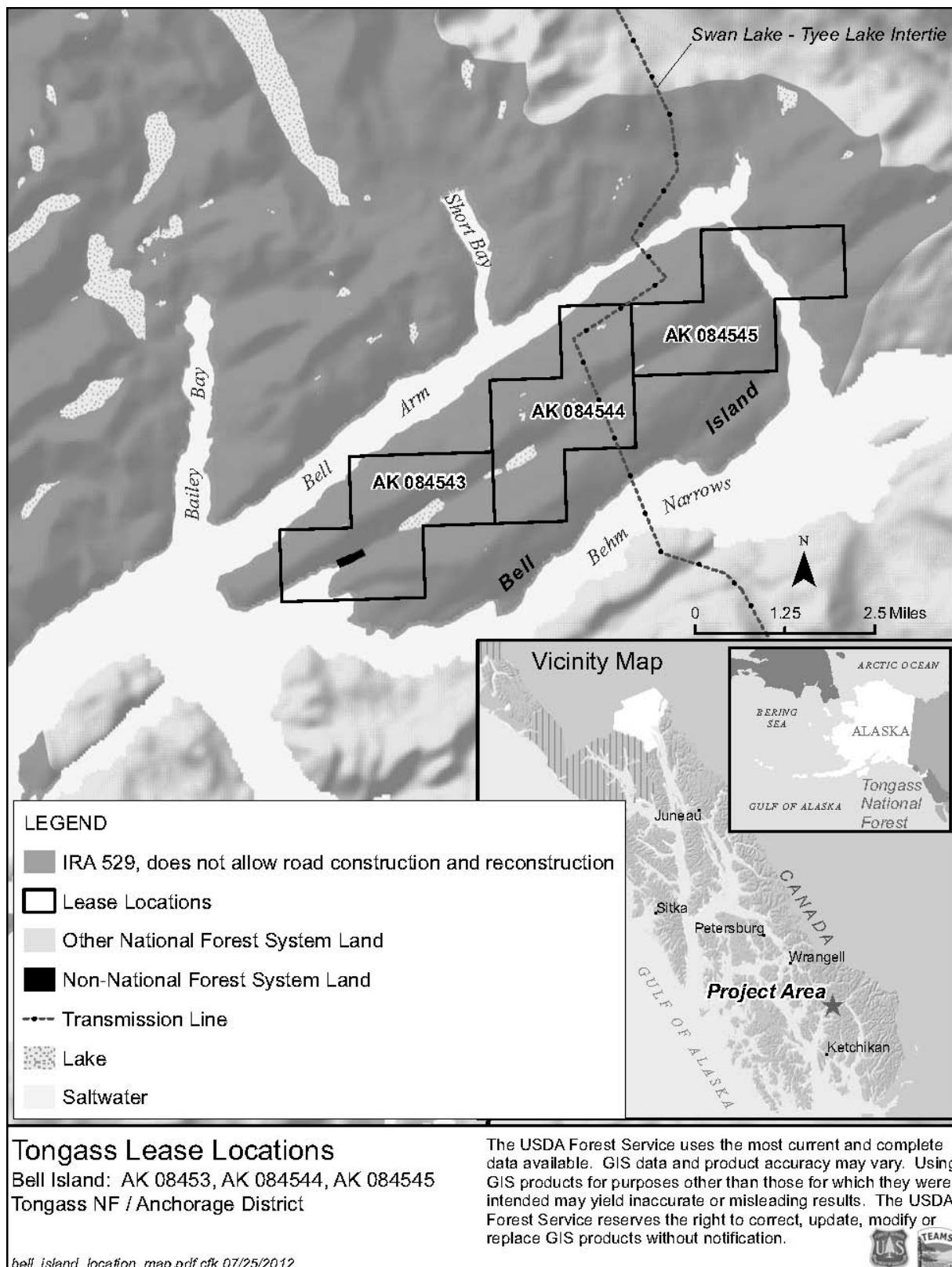


Figure 1. Bell Island and Cleveland Peninsula Lease Locations

A non-discretionary restriction (Roadless Area Stipulation) was developed in the PEIS to be applied to any leases within NFS Inventoried Roadless Areas (IRAs) (USDA 2008 p. 2-20). Three of the pending leases (referred to as Bell Island leases) analyzed in Volume II, Chapter 11 of the PEIS are within the Ketchikan-Misty Fiords Ranger District of the Tongass National Forest. The PEIS analyzed whether or not the lands should be made available for the BLM to lease to a private geothermal developer. These leases encompass much of Bell Island and a portion of the Cleveland Peninsula on the adjacent mainland in the Tongass National Forest. Although the PEIS considered and disclosed the potential effects of the RFD on specific key resource concerns in the lease area (incorporating by reference the impacts described in Volume I of the PEIS), the PEIS did not identify the IRA status of the lease areas on Bell Island and the adjacent Cleveland Peninsula (the North Cleveland IRA), and did not disclose the potential effects of the RFD scenario on the roadless area values associated with this IRA. The socio-economic conditions have changed since the PEIS; thus the subsistence and socio-economic analyses in the PEIS are no longer accurate.

The Final Supplemental Environmental Impact Statement (SEIS) complements the data presented in Volume II, Chapter 11 of the PEIS, by considering comments obtained from the public and Federal, State, and local agencies during local public scoping and tribal consultation. It also includes an analysis of the effects of the RFD scenario on the North Cleveland IRA, subsistence, and the social and economic situation in Southeast Alaska, particularly the Ketchikan Gateway Borough.

PURPOSE AND NEED

The PEIS did not recognize that the Bell Island leases are within the North Cleveland IRA, nor did it analyze the potential effects of exploration and development of geothermal resources on the values and characteristics of this roadless area. Therefore, the purpose for the SEIS is to update the analysis in the PEIS by addressing roadless and other key resource concerns not previously analyzed in Volume II of the PEIS, such as subsistence, and to ensure that other compliance actions such as public scoping and tribal consultation occurred in the areas most affected by the decision whether or not to consent to the issuance of the Bell Island leases.

The need for the Federal action is to fulfill the Forest Service obligations under Section 225 of the EAct 2005 and the 2008 Memorandum of Understanding between the United States Department of the Interior and the United States Department of Agriculture regarding geothermal leasing and permitting.

DECISION RATIONALE

In making my decision, I considered how well both alternatives responded to the Purpose and Need for the Federal action and met Forest Service obligations under the EAct of 2005, National Energy Policy, and the Forest Service Minerals Program Policy. All of these reflect a serious national need to facilitate domestic energy production. My decision responds to this need, while minimizing impacts to the environmental values of NFS

lands. I consider the Selected Alternative to also be the environmentally preferable alternative. This is because the Selected Alternative will facilitate renewable energy production, which will reduce carbon emissions and help offset the negative effects of climate change. These benefits would be obtained with no impacts to National Forest System lands since the SEIS anticipates that geothermal development on these leases would occur off-Forest.

The PEIS recognizes that roads are critical to powerplant and wellfield development. Consequently, the SEIS determined that only minimal development would be possible within the IRA. That minimal development would be possible because the subject lease areas contain approximately 13.9 acres of private lands and surface occupancy is not prohibited.

I have determined that my decision does not need to specify monitoring provisions because making these lands available for subsequent leasing does not authorize any ground-disturbing activities that could affect environmental resources. Monitoring appropriate to geothermal exploration, development, operation, and closure activities would be addressed in the site-specific environmental analyses that would be conducted when those activities are proposed.

My decision conforms with the 2008 Tongass National Forest Land and Resource Management Plan (Forest Plan) and is consistent with the Semi-Remote Recreation Land Use Designation (USDA 2008 p. 3-63). Specifically, this decision is also consistent with the direction for inventoried roadless areas and 36 CFR 294 Subpart B 294.11 – Roadless Area Conservation, Final Rule.

This action also responds to the goals and objectives outlined in the Forest Plan, which encourages prospecting, exploration, development, in areas with the highest potential, while ensuring development is in an environmentally sensitive manner and other high-valued resources are considered when minerals developments occurs (USDA 2008 p. 3-122).

The Bell Island Leases Final SEIS documents the analysis and conclusions upon which this decision is based.

PUBLIC INVOLVEMENT

For the Draft SEIS, local tribal governments were contacted on January 27, 2011 to help identify and assess historic properties that may be affected by the potential leases. A letter inviting tribal participation in government-to-government consultation on the Draft SEIS was sent to three local tribal governments: Ketchikan Indian Corporation, Metlakatla Indian Community, and Organized Village of Saxman. Council meetings were held the second week of each month and were ongoing throughout the process.

The Notice of Intent (NOI) to prepare the Draft SEIS for this proposal to authorize consent to geothermal leasing within the Bell Island leases was published in the Federal Register (FR) on May 25, 2011 (76 FR 30303). The NOI asked for public comments on the three pending lease applications from May 25, 2011 through June 24, 2011. In

addition, as part of the public involvement process, the agency sent letters on May 19, 2011 notifying interested public of the upcoming FR notice, and held a public meeting on June 2, 2011 at the Ketchikan-Misty Fiords Ranger District Office.

As a result of these efforts, the agency received 14 responses; three requested to be put on the Draft SEIS mailing list, seven were from individuals, one from a private business and three from other agencies. Using the comments from the public and other agencies, a list of issues to address was delineated. No new issues were identified from these scoping comments beyond what was previously addressed in the PEIS; the scope of the analysis remained the same.

The Draft SEIS was mailed on May 8, 2012 to all parties that had requested a copy, to anyone who had requested information on the project, and the Ketchikan-Misty Fiords Ranger District mailing list. This mailing included 62 individuals, agencies and groups. On May 10, 2012, the Draft SEIS was posted on the Tongass National Forest Projects webpage. The Federal Register Notice of Availability of the Draft SEIS was published on May 18, 2012. A 45-day comment period began on May 19, 2012. A legal notice was published in the Ketchikan Daily News on May 23, 2012 notifying the public of the release of the Notice of Availability (NOA) and location of the document on the web. In addition, an informational meeting and a Subsistence Hearing were held June 16, 2012 at the Ketchikan-Misty Fiords Ranger District Office.

A total of three comment letters were received on the Draft SEIS. These letters were from the Department of Interior, the Environmental Protection Agency and Alaska State Department of Natural Resources. None of the comment letters had comments that needed responses; all were supportive of the SEIS. These letters are contained in the Final SEIS as Appendix B.

ALTERNATIVES CONSIDERED

In addition to the Selected Alternative, I considered the No Action alternative, which is discussed below. Alternative B is the environmentally preferred alternative. A more detailed comparison of these alternatives can be found in the Final SEIS on pages 11-13.

Alternative A No-Action Alternative: Under the No Action alternative, the Forest Supervisor would deny a consent determination for all of the three pending lease applications. There would be no opportunity for exploration or development in the area covered by the 7,680 acre parcels. This alternative is required by the National Environmental Policy Act and also serves as an environmental baseline for comparing the action alternative(s).

FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

2008 Tongass Land and Resource Management Plan Amendment

This decision is consistent with the 2008 Forest Plan Amendment. The project is located within an area identified in the Forest Plan as having a Land Use Designation (LUD) of Semi-Remote Recreation. Direction for management of this area is to permit only



facilities and uses consistent with Semi-Remote Recreation LUD. This LUD represents a Transportation and Utility System “window” and provides opportunities for future designation and location of Transportation and Utility sites.

ANILCA Section 810 and 811, Subsistence Evaluation and Finding

The effects of this project have been evaluated to determine potential effects on subsistence opportunities and resources. There is no documented or reported subsistence use that would be restricted as a result of this decision. For this reason, neither alternative would result in a significant possibility of a substantial restriction of subsistence use of wildlife, fish, or other foods.

Endangered Species Act of 1973

This decision to consent to lease will not affect federally listed threatened or endangered species within the project area.

National Historic Preservation Act of 1966

The Forest Service program for compliance with the National Historic Preservation Act includes locating, inventorying and nominating all cultural sites that may be directly or indirectly affected by scheduled activities. This decision to consent to lease will not affect the known cultural properties in the project area.

Federal Cave Resource Protection Act

No known significant caves have been identified in the project area. Therefore, I have determined that no significant effects would occur to karst or caves from this decision.

Clean Water Act

I have determined that the Selected Alternative is in compliance with the Clean Water Act. My decision to consent to lease will not affect water within the project area. Therefore, I have determined that no significant impacts to water quality would be expected to occur from this decision.

Clean Air Act

No emissions are anticipated from the implementation of the Selected Alternative. Therefore, I have determined that no significant impacts to air quality would be expected to occur from this decision.

Floodplain Management (E.O. 11988), Protection of Wetlands (E.O. 11990)

This action will not impact the functional value of any floodplains as defined by Executive Order 11988 and will not have negative impacts on wetlands as defined by Executive Order 11990.

Recreational Fisheries (E.O. 12962)

Federal agencies are required, to the extent permitted by law and where practicable, and in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities. As required by this Order, I have evaluated the effects of this action on aquatic systems and recreational fisheries and documented those effects relative to the purpose of this order. Since there are no direct ground-disturbing activities proposed by

this decision there are no effects to fisheries resources within the project area; therefore, there will be no direct, indirect or cumulative impacts related to this Order.

Environmental Justice (E.O. 12898)

I have determined that in accordance with Executive Order 12898, this project does not have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

Invasive Species (E.O. 13112)

Executive Order 13112 directs Federal agencies whose actions may affect the status of invasive species to insure coordinated, cost-efficient agency actions addressing the prevention, detection, control, and monitoring of alien species. "Invasive species" refers to those non-native species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Actions to be taken include planning at the local, tribal, state to identify species that are likely to cause economic or environmental harm, or, regional, and ecosystem levels, in cooperation with stake holders and organizations addressing invasive species.

Invasive plants were considered in the Volume II of the PEIS (Chapter 11). An invasive plant risk assessment was not completed for the current analysis and decision. An extensive examination of invasive species will be completed when a site-specific development environmental analysis is completed.

Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments)

Executive Order 13175 directs Federal agencies to respect tribal self-government, sovereignty, and tribal rights, and to engage in regular and meaningful government-to-government consultation with tribes on proposed actions with tribal implications.

The Ketchikan District Ranger communicated with the Ketchikan Indian Corporation, the Metlakatla Indian Community, and Organized Village of Saxman as described in Chapter 1 of the Final SEIS.

Magnuson-Stevens Fishery Conservation and Management Act

Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act requires consultation with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) for actions or proposed actions that may adversely affect essential fish habitat (EFH). It is my determination that implementing the Selected Alternative would not create any significant adverse effects to essential fish habitat.

ADMINISTRATIVE REVIEW (APPEAL) OPPORTUNITIES

Documents are not appealable when no comments expressing concern or only supportive comments are received during the comment period for a draft EIS (40 CFR 1502.19), and the Responsible Official's decision does not modify the preferred alternative identified in the draft SEIS (36 CFR 215.12(e)(2)). Therefore this decision is not subject to appeal.

IMPLEMENTATION DATE

Since this decision is not subject to appeal (215.12) implementation may begin immediately as documented in this Record of Decision (215.9(c)(2)). This meets the compliance timeframes as outlined in 40 CFR 1506.10(b)(2).

CONTACT

For additional information concerning this decision, contact: Sarah Samuelson, Tongass National Forest Minerals Program Manager, 8510 Mendenhall Loop Road, Juneau, AK 99801-8041.



Forrest Cole
Forest Supervisor

1/29/2012

Date

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Summary

Background

The production, transmission, and conservation of energy are national priorities, as reflected in the Energy Policy Act (EPA) of 2005 and other government laws and policies. Section 225 of the Act required the Secretary of the Interior and the Secretary of Agriculture (the Secretaries) to enter into and submit to Congress a Memorandum of Understanding (MOU) regarding coordination of leasing and permitting for geothermal development of public lands under their respective jurisdictions. Section 225(b) of the Act stated that this MOU shall establish the following:

- 1) An administrative procedure for processing geothermal lease applications, including lines of authority, steps in application processing, and time limits;
- 2) A 5-year program for geothermal leasing of lands in the National Forest System (NFS), and a process for updating that program every 5 years; and
- 3) A program for reducing the backlog of geothermal lease applications, pending as of January 1, 2005, by 90 percent (by August 8, 2010).

Section 222(d) stated that it is a priority for the Secretaries to ensure timely completion of administrative actions, such as amendments to applicable forest and resource management plans, necessary to process lease applications pending on August 8, 2005, and that all future forest and resource management plans in areas of high geothermal resource potential consider geothermal leasing and development.

To respond to these directives, the Bureau of Land Management (BLM) and the Forest Service, in cooperation with the Department of Energy (DOE), jointly prepared a Programmatic Environmental Impact Statement (PEIS) titled Final PEIS for Geothermal Leasing in the Western United States (USDA 2008). The PEIS provides a framework to facilitate the BLM and Forest Service efforts to analyze and expedite the leasing of BLM and NFS lands with high potential for renewable geothermal resources in twelve western states including Alaska.

The PEIS included two different scopes of analysis. The first scope considered programmatic procedures to allocate lands as open or closed to leasing, and identified stipulations that may be applied to leases for development of geothermal resources (Volume I of the PEIS). One of the stipulations adopted in the PEIS is a non-discretionary restriction on new road construction or reconstruction (Roadless Area Stipulation) on any leases within NFS inventoried roadless areas (IRAs) (USDA 2008 p. 2-20). The second scope included an analysis of the potential effects associated with the 19 backlogged lease applications that were pending as of January 1, 2005 (Volume II of the PEIS).

The Record of Decision (ROD) for the PEIS was issued in December 2008 (USDA 2008a). This ROD only authorized the programmatic activities discussed in Volume I of the PEIS. The remaining 19 pending lease applications, grouped together in seven

geographic areas, were evaluated in Volume II of the PEIS. The BLM and Forest Service will issue separate decisions for each of the seven areas associated with the pending lease applications. This requires execution of RODs separate from the programmatic action.

Three of the backlogged lease areas analyzed in Chapter 11, Volume II of the PEIS are within the Ketchikan-Misty Fiords Ranger District of the Tongass National Forest. These areas encompass much of Bell Island and a portion of the Cleveland Peninsula (mainland), and together total 7,680 acres. With the exception of a private inholding within one of the lease areas (13.9 acres owned by the lease applicant), the lease areas are all on NFS lands and are located within the boundaries of an IRA (the North Cleveland IRA).

The Tongass National Forest is supplementing the PEIS with this Supplemental Environmental Impact Statement (SEIS) because (1) the Bell Island leases were not identified as being within a roadless area and consequently not analyzed as such, (2) the effects of leasing on subsistence uses and needs were not addressed as required (UDSA 2008 p. 2-22), and (3) since the release of the PEIS, the boundaries of the Boroughs have changed.

The Forest Supervisor will decide, based upon the information contained in this document, whether or not to consent to the lease application areas being made available for leasing. The Forest Supervisor will then inform the BLM, based upon the ROD of this SEIS, whether or not the Forest Service consents to the leases being issued. The BLM will then follow its procedures to determine whether or not to issue the leases. At this time, the Chief of the Forest Service has reserved authority to authorize road construction and reconstruction and/or the cutting, sale, or removal of trees in inventoried roadless areas. Although the roadless stipulation will apply to any subsequent exploration and development activities, these activities may include the incidental cutting, sale, and/or removal of trees.

Leasing geothermal resources by the BLM authorizes the lessee a nonexclusive right to future exploration and an exclusive right to produce and use the geothermal resources within the lease area subject to existing laws, regulations, formal orders, and the terms, conditions, and stipulations in or attached to the lease form or included as conditions of approval in permits. *Lease issuance alone does not authorize any ground-disturbing activities to explore for or develop geothermal resources without project-specific approval for the intended operation.* Such approval would include additional environmental reviews and permits, as appropriate. In these subsequent environmental reviews, the BLM would be the lead agency and the Forest Service would serve as a cooperating agency.

Purpose and Need

Volume II of the PEIS disclosed the effects of reasonably foreseeable activities associated with the exploration and development of geothermal resources if the Bell Island leases were issued. However, the PEIS did not recognize that the Bell Island leases are within the North Cleveland IRA, nor did it analyze the potential effects of exploration and development of geothermal resources on the values and characteristics of this roadless

area. Therefore, the purpose and need for this SEIS is to update the analysis in the PEIS to address roadless and other key resource concerns not previously analyzed in Volume II of the PEIS, such as subsistence, and to ensure that other compliance actions such as public scoping and tribal consultation occur in the areas most affected by the decision whether or not to consent to the issuance of the Bell Island leases.

This action is needed to fulfill Forest Service obligations under Section 225 of the EPCA and the MOU between the United States Department of the Interior (USDOI) and the United States Department of Agriculture (USDA) regarding geothermal leasing and permitting, and also responds to the goals and objectives outlined in the 2008 Tongass Land and Resource Management Plan (Forest Plan).

Proposed Action

The Ketchikan-Misty Fjords Ranger District, Tongass National Forest is updating the PEIS through this SEIS, using the same Reasonably Foreseeable Development (RFD) scenario for exploration and development of geothermal resources presented in Volume II of the PEIS (USDA 2008 p. 11-11). The Forest Service will analyze the effects of these reasonably foreseeable actions on the roadless area values and characteristics of the North Cleveland IRA, analyze the potential effects on subsistence resources and uses, and reaffirm the 2008 PEIS analysis with regard to other key resources within the project area. These analyses will be based on the assumption that the non-discretionary Roadless Area Stipulation set forth in the PEIS will apply to the Bell Island leases. That stipulation states that no new road construction or reconstruction would be allowed in IRAs.

The Proposed Action (Alternative B) is for the Forest Service to provide a consent determination to the BLM for the issuance of the pending leases on Bell Island and the adjacent mainland. This consent determination would be based on the RFD scenario identified in Volume II, Chapter 11 of the PEIS, and would incorporate pertinent stipulations from Volume I of the PEIS, including the Roadless Area Stipulation.

Issues

As a result of public scoping conducted primarily in June of 2011, the Tongass National Forest received 14 responses collectively from individuals, private businesses, and other state and federal agencies. These comments did not identify any issues that had not previously been identified for the PEIS or during internal scoping for the Draft SEIS. The primary issues and rationale for this SEIS remain the same:

- The Bell Island lease area was not recognized as being within the North Cleveland (529) IRA, so the Forest Service needs to analyze the potential effects of the pending geothermal leases on the roadless area values of that IRA;
- The effects of applying the non-discretionary Roadless Area Stipulation on the leases will need to be evaluated and disclosed; and
- Additional stipulations may need to be identified to minimize effects on NFS surface resources.

Development Scenario

Under the RFD Scenario, as described in the PEIS, one 20 megawatt (MW) binary power plant would likely be developed in the proposed lease areas for electricity generation (USDA 2008 p. 11-11). Should a commercially viable geothermal resource be located, the pending noncompetitive lease application describes the likely development of one 20 MW binary power plant, which is expected to result in approximately 10 acres of disturbance. The RFD Scenario did not include any estimates of disturbance resulting from construction of transmission lines, because the amount of disturbance would depend on where any future geothermal power plant is sited. Any disturbance resulting from power line construction if a geothermal power plant were sited would be in addition to the area estimated in the PEIS, and the effects of this disturbance would be considered and disclosed in subsequent project specific National Environmental Policy Act (NEPA) analyses.

Alternatives

Alternative A: No-Action Alternative

Under the No Action Alternative, the Forest Service would deny a consent determination for all of the three pending lease applications. There would be no opportunity for exploration or development in the area covered by the 7,680 acre parcels.

Alternative B: Proposed Action

Under this alternative, the Forest Service would consent to the three pending lease applications. Eventual lease authorization by the BLM would be subject to the stipulations identified in this SEIS and set forth in the ROD for this action, including the non-discretionary Roadless Stipulation.

Environmental Effects

Land Use and Recreation - Inventoried Roadless Areas

Alternative A would have no effect on the roadless area values associated with the North Cleveland IRA as denial of consent to the leases would be recommended. In Alternative B, the proposed action would not cause any direct impacts to roadless resources; however, the anticipated geothermal exploration and development activities likely to follow leasing would potentially result in indirect impacts to roadless resources. Development of geothermal resources within the Bell Island leases could potentially affect the roadless characteristics of the area by contributing to a change from undeveloped to developed land uses, but would be consistent with the allocation of the Semi-Remote Recreation Land Use Designation (LUD) in the 2008 Forest Plan.

Subsistence

Alternative A would have no effect. Under Alternative B, the proposed action would not cause any direct impacts to subsistence uses; however the development of geothermal resources that may follow leasing could affect subsistence uses as a result of increased human activity associated with development. The non-discretionary Roadless Stipulation would help minimize these effects as no new roads could be developed or reconstructed within the boundaries of the IRA. Increased visitor trips would most likely continue to be limited to the upland freshwater lakes (access from the former lodge) and beach fronts

accessible by boat, leaving the majority of the Bell Island lease area in the existing primitive condition.

Socioeconomics and Environmental Justice

The No Action Alternative would have no effect on social and economic conditions in Ketchikan Gateway Borough. Low-income and minority residents would not be disproportionately affected. Alternative B would not have any direct effects on the social and economic environment in the Ketchikan Gateway Borough or elsewhere in Southeast Alaska; however, anticipated future actions associated with any subsequent development of geothermal resources could contribute to increased employment opportunities.

Resources Previously Analyzed

The No Action alternative would have no impact on resources within the Bell Island lease area. Alternative B would not have any direct effects on the resources within the Bell Island lease area as this action would not authorize any surface disturbance. Anticipated future actions associated with any subsequent development of geothermal resources would be analyzed in subsequent NEPA documents. Any developments could affect other resources in the Bell Island lease area, as discussed in Volume II of the PEIS. With the application of applicable lease stipulations (Chapter 2, PEIS and also identified in this SEIS) and best management practices included in Appendix B of the PEIS ROD (USDA 2008a), the effects associated with an installed geothermal power plant and ancillary facilities would be reduced and are not expected to be significant.

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List of Acronyms and Abbreviations

ADF&G	Alaska Department of Fish and Game
ANILCA	Alaska National Interest Lands Conservation Act
BLM	Bureau of Land Management
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DOE	Department of Energy
EPAct	Energy Policy Act
FEIS	Final Environmental Impact Statement
FR	Federal Register
FWS	Fish and Wildlife Service
GMU	Game Management Unit
IRA	Inventoried Roadless Area
kV	Kilovolt
LUD	Land Use Designation
MOU	Memorandum of Understanding
MW	Megawatt
NEPA	National Environmental Policy Act
NFS	National Forest System
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
PEIS	Programmatic Environmental Impact Statement
RFD	Reasonably Foreseeable Development
ROD	Record of Decision
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Office
USDA	United States Department of Agriculture
USDOI	United States Department of the Interior

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Chapter 1. Purpose of and Need for Action

Changes between the Draft and Final Supplemental EIS

Changes have been made to this Supplemental EIS (SEIS) based on review of the Draft SEIS by both the public and the Forest Service. Three editorial changes were made to this Final SEIS based on the review of the Draft SEIS by both the public and the Forest Service. The first editorial change was made correcting Lake Tyee to Tyee Lake, which affected Figure 1-1 on page 3, and the text on pages 10 and 17. The second change made was on page 7 where the word Ranger was omitted from the Ketchikan-Misty Fiords Ranger District. A third modification was due to a policy change on the review process for activities in Roadless Areas as noted below:

On May 30, 2012, the Secretary of Agriculture's Memorandum 1042-156 requiring review and approval of certain activities in Roadless Areas expired. On May 31, 2012, in a letter from the Chief of the Forest Service he clarifies a new process for review of certain activities in Roadless Areas. The new policy states, "... the Chief will review all projects involving road construction or reconstruction and the cutting, sale, or removal of timber in those areas identified in the set of inventoried roadless area maps contained in the Forest Service Roadless Area Conservation, Final Environmental Impact Statement Volume 2 dated November 2000."

The Draft SEIS stated that the Secretary of Agriculture would be reviewing and approving any activities within the Bell Island leases project area. As of May 31, 2012, the reviewing official will be the Forest Service Chief. This change involves two revisions in the document. The first revision is found in the Summary Background (page ii) and the second change is to Chapter 3 Introduction (page 15).

Document Structure

This Final Supplemental Environmental Impact Statement (SEIS) discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed and no-action alternatives to those resources which were not previously considered in the Programmatic Environmental Impact Statement (PEIS).

Chapter 1. Purpose of and Need for Action: This chapter includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also describes how the Forest Service informed the public of the proposal and how the public responded.

Chapter 2. Alternatives, including the Proposed Action: This chapter provides a more detailed description of the agency's proposed action and the alternative(s) to that proposed action.

Chapter 3. Affected Environment and Environmental Consequences: This chapter describes the environmental effects of implementing the alternatives on those resources which were not previously analyzed in the PEIS.

Chapter 4. Consultation and Coordination: This chapter provides a list of preparers and agencies consulted during the development of the Draft SEIS.

Appendices: The appendices provide more detailed information to support the analysis presented in this SEIS.

Additional documentation, including more detailed analyses of project area resources, may be found in the project planning record located at the Ketchikan-Misty Fiords Ranger District.

Background

In 2008, in response to the Energy Policy Act (EPA) of 2005, the Bureau of Land Management (BLM) and the Forest Service, in cooperation with the Department of Energy (DOE), jointly prepared a PEIS titled Final PEIS for Geothermal Leasing in the Western United States. The PEIS provides a framework to facilitate the BLM and Forest Service efforts regarding geothermal lease applications that were pending as of the EPA of 2005, as well as future determinations for projects on BLM and National Forest System (NFS) lands.

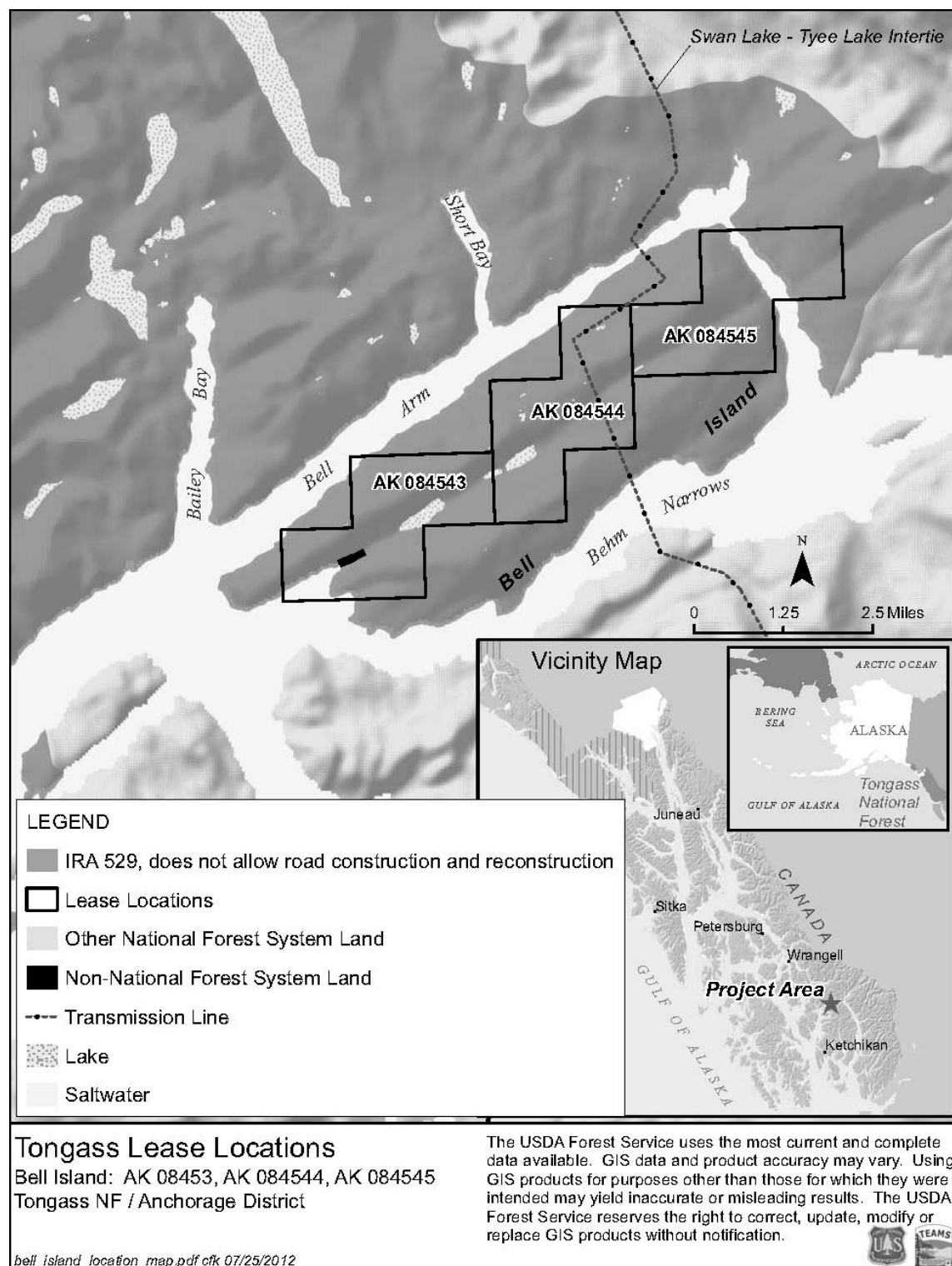
The PEIS incorporated two scopes for analysis. The first scope included an analysis of programmatic procedures to allocate lands as open or closed for leasing for the development of geothermal resources, a review of applicable existing land use plans, and identified stipulations for pending and future geothermal leases (Volume I of the PEIS). The second scope covered the site-specific analysis of 19 backlogged lease applications that were grouped and analyzed in seven distinct geographic areas (Volume II of the PEIS). Both analyses considered a Reasonably Foreseeable Development (RFD) scenario for geothermal development on federal lands. The geothermal RFD scenarios serve as a basis for analyzing environmental impacts resulting from future leasing and development of federal geothermal resources within the western United States over the next 20 years. This scenario assists land management agencies to better determine the probable level of disturbance and the likely effects on the environment should subsequent development occur.

A non-discretionary restriction (Roadless Area Stipulation) was developed in the PEIS to be applied to any leases within NFS inventoried roadless areas (IRAs) (USDA 2008 p. 2-20). Three of the pending leases (referred to as Bell Island leases) analyzed in Volume II, Chapter 11 of the PEIS are within the Ketchikan-Misty Fiords Ranger District of the Tongass National Forest. The proposed action analyzed whether or not the lands should be made available for the BLM to lease to a private geothermal developer. These leases encompass much of Bell Island and a portion of the Cleveland Peninsula on the adjacent mainland in the Tongass National Forest. Although the PEIS considered and disclosed the potential effects of the RFD on specific key resource concerns in the lease area (incorporating by reference the impacts described in Volume I of the PEIS), the PEIS did not identify the IRA status of the lease areas on Bell Island and the adjacent Cleveland Peninsula (the North Cleveland IRA), and did not disclose the potential effects of the RFD scenario on the roadless area values associated with this IRA.

In December 2008, a Record of Decision (ROD) for the PEIS was issued, authorizing only the programmatic procedures associated with geothermal leases. As the Forest Service did not propose to amend any land use plans or allocate any lands as administratively closed to geothermal leasing, the Forest Service did not have a decision to issue on the programmatic procedures. The site-specific decisions on the 19 backlogged lease applications were not issued at that time as the agencies determined that they would need independent RODs, tiered to the PEIS, as issues are addressed and other compliance actions are completed (e.g., tribal consultation, roadless area review).

This SEIS will complement the data presented in Volume II, Chapter 11 of the PEIS, by considering comments obtained from the public and federal, state, and local agencies during local public scoping and tribal consultation. It will also include an analysis of the effects of the RFD scenario on the North Cleveland IRA, subsistence, and the social and economic situation in Southeast Alaska, particularly the Ketchikan Gateway Borough (Figure 1-1). This will facilitate the Tongass National Forest Supervisor's decision whether or not the Forest Service should consent to the lease application areas being made available for leasing. The Forest Supervisor will then inform the BLM, based upon the ROD of this SEIS, of the Forest Service's decision whether or not to consent to the leases being issued. The BLM will then follow its procedures to determine whether or not to issue the leases. In the event the leases are issued by the BLM, the BLM then becomes the lead agency in any subsequent analysis or permitting efforts, as the BLM is the manager of the lease parcels.

Figure 1-1. Bell Island and Cleveland Peninsula Lease Locations



Purpose and Need for Action

Volume II of the PEIS disclosed the effects of reasonably foreseeable activities associated with the exploration and development of geothermal resources if the Bell Island leases were issued. However, the PEIS did not recognize that the Bell Island leases are within the North Cleveland IRA, nor did it analyze the potential effects of exploration and development of geothermal resources on the values and characteristics of this roadless area. Therefore, the purpose and need for this SEIS is to update the analysis in the PEIS to address roadless and other key resource concerns not previously analyzed in Volume II of the PEIS, such as subsistence, and to ensure that other compliance actions such as public scoping and tribal consultation occur in the areas most affected by the decision whether or not to consent to the issuance of the Bell Island leases.

The action is needed to fulfill Forest Service obligations under Section 225 of the EPOA of 2005 and the 2008 Memorandum of Understanding (MOU) between the United States Department of the Interior (USDOI) and the United States Department of Agriculture (USDA) regarding geothermal leasing and permitting.

Section 225 of the Act required the Secretary of the Interior and the Secretary of Agriculture (the Secretaries) to enter into and submit to Congress a Memorandum of Understanding (MOU) regarding coordination of leasing and permitting for geothermal development of public lands under their respective jurisdictions. Section 225(b) of the Act stated that this MOU shall establish the following:

1. An administrative procedure for processing geothermal lease applications, including lines of authority, steps in application processing, and time limits;
2. A 5-year program for geothermal leasing of lands in the National Forest System (NFS), and a process for updating that program every 5 years; and
3. A program for reducing the backlog of geothermal lease applications, pending as of January 1, 2005, by 90 percent (by August 8, 2010).

Section 222(d) stated that it is a priority for the Secretaries to ensure timely completion of administrative actions, such as amendments to applicable forest and resource management plans, necessary to process lease applications pending on August 8, 2005, and that all future forest and resource management plans in areas of high geothermal resource potential consider geothermal leasing and development.

This action also responds to the goals and objectives outlined in the 2008 Tongass Land and Resource Management Plan (Forest Plan), while maintaining the desired conditions described in that Plan.

Proposed Action

The action proposed to meet the purpose and need (Alternative B) is for the Forest Service to recommend a consent determination to the BLM to issue the three pending leases on Bell Island (AK 084543, AK 084544, and AK 084545) in the Tongass National Forest to the geothermal lease applicant, based upon the RFD scenario provided in the

Volume II, Chapter 11 of the PEIS. The RFD describes in general terms the best professional estimate of the potential subsequent development of geothermal resources that may occur if these leases were issued. Any decision to consent to the leases would incorporate pertinent stipulations from Volume I of the PEIS, including the Roadless Area Stipulation, and any additional stipulations identified by the Forest Service during this analysis as necessary to minimize effects on National Forest System resources. Any future development of geothermal resources would require additional National Environmental Policy Act (NEPA) analyses.

The project area is 7,680 acres, encompassing most of Bell Island as well as a portion of the Cleveland Peninsula on the adjacent mainland in the Alexander Archipelago of Southeast Alaska. A private inholding is located on Bell Island within Lease AK 084543, and is approximately 13.9 acres in size. Two alternatives were considered in Volume II, Chapter 11 of the PEIS analysis and are carried forward in this analysis. No additional alternatives were considered because no new issues were identified during scoping that warranted further analysis. In Alternative A, the No-Action Alternative, the Forest Supervisor would deny a consent determination for all of the lease applications. For Alternative B, Leasing with Stipulations, the Forest Supervisor would issue a consent determination for the lease applications. Pertinent stipulations from Volume I, Chapter 2 of the PEIS and any additional stipulations identified by the Forest Service during the Draft SEIS analysis would be part of the ROD recommending a consent determination. In the event that the BLM issues the Bell Island leases, any lease stipulations identified in the ROD and consent determination must be included with those leases.

Decision Framework

The Responsible Official is the Tongass Forest Supervisor. Given the purpose and need, the Forest Supervisor will review the proposed action, other alternative(s), and the environmental effects disclosed in the PEIS and this SEIS in order to make the following decisions:

1. Will the Tongass National Forest consent to lease the three pending lease applications on National Forest Systems lands?
2. If so, what lease stipulations will the Forest Service recommend applying to the consent determination?
3. Does the project require a Forest Plan amendment?

Cooperating Agencies

According to the Council on Environmental Quality's (CEQ) regulations implementing NEPA (40 CFR 1508.5), a cooperating agency is any federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major federal action significantly affecting the quality of the human environment. A state or local agency of similar qualifications may, by agreement with the lead agency, become a cooperating agency (CEQ 40 CFR 1508.5).

The BLM is the federal government's minerals manager and is responsible for issuing geothermal leases on NFS lands. Guidance for implementation of Section 225 of the EAct of 2005 is addressed in the MOU between the BLM and the Forest Service (USDA 2008). Based on language in Section VII Pre-Lease Environmental Documentation the BLM has agreed to be a cooperating agency for this planning effort.

Public Involvement

The Notice of Intent (NOI) to prepare the Draft SEIS for this proposal to authorize consent to geothermal leasing within the Bell Island leases was published in the federal Register (FR) on May 25, 2011. The NOI asked for public comments on the three pending lease applications from May 25, 2011 through June 24, 2011. In addition, as part of the public involvement process, the agency sent letters on May 19, 2011 notifying interested public of the upcoming FR notice, and held a public meeting on June 2, 2011 at the Ketchikan-Misty Fiords Ranger District Office.

As a result of these efforts, the agency received 14 responses; three requested to be put on the Draft SEIS mailing list, seven were from individuals, one from a private business and three from other agencies. Using the comments from the public and other agencies, a list of issues to address were delineated.

Tribal Consultation

Consultation with federally-recognized American Indian and Alaska Native tribes was initiated on September 12, 2007 during the initial PEIS analysis process. Over 400 letters were sent to tribal governments in association with the PEIS. No responses from American Indian and Alaska Native tribes were received as of the date of publication of the PEIS.

For the Draft SEIS, local tribal governments were contacted on January 27, 2011 to help identify and assess historic properties that may be affected by the potential leases. A letter inviting tribal participation in government-to-government consultation on the Draft SEIS were sent to three local tribal governments: Ketchikan Indian Corporation, Metlakatla Indian Community, and Organized Village of Saxman. Council meetings were held the second week of each month and will be ongoing throughout the process. To date no sites or concerns have been raised.

Public Review of the Draft Supplemental EIS

The Draft SEIS was mailed on May 8, 2012 to all parties that had requested a copy, to anyone who had requested information on the project, and the Ketchikan-Misty Fiords Ranger District mailing list. This mailing included 62 individuals, agencies and groups. On May 10, 2012, the Draft SEIS was posted on the Ketchikan-Misty Fiords Ranger District Office website. The Federal Register Notice of Availability of the Draft SEIS was published on May 18, 2012. A legal notice was published in the Ketchikan Daily News on May 23, 2012 alerting the public of the release of the Notice of Availability (NOA) and location of the document on the web. A 45-day comment period occurred until July 9, 2012. In addition, an informational meeting and a Subsistence Hearing were held June 16, 2012 at the Ketchikan-Misty Fiords Ranger District Office.

A total of three comment letters were received on the Draft SEIS. These letters were from the Department of Interior, the Environmental Protection Agency and Alaska State Department of Natural Resources. None of these letters had comments expressing concern or had comments that warranted responses. These letters are contained in Appendix B for reference.

Issues

The Forest Service separates issues into two groups: significant and non-significant issues. Significant issues are defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues are those issues identified as:

1. Outside the scope of the proposed action;
2. Already decided by law, regulation, Forest Plan, or other higher-level decision;
3. Irrelevant to the decision to be made; or
4. Conjectural and not supported by scientific or factual evidence.

The CEQ NEPA regulations explain this delineation in Sec. 1501.7, which states that agencies shall "...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review...". A list of non-significant issues and reasons regarding their categorization as non-significant may be found in the Bell Island Geothermal Leases Supplemental EIS Scoping Report. This document can be found in the project planning record which is located at the Ketchikan Misty Fiord District office in Ketchikan, AK.

For this SEIS, the Tongass National Forest did not identify any additional significant issues as a result of scoping. The primary issue and rationale for this SEIS remains the same; the Bell Island leases were not recognized as being within the North Cleveland IRA (# 529), and the PEIS did not consider the potential effects of the leases on this IRA.

Chapter 2. Alternatives, Including the Proposed Action

Introduction

In the PEIS, Chapter 11 Volume II, referred to as Section 11.2, Proposed Action and Alternatives. Section 11.2 provided the details of the proposed action, alternatives to the proposed action, and an overview of the RFD scenario for the pending lease application sites AK084543, AK084544, and AK084545. Chapter 2 in this SEIS will address the same alternatives considered previously, and identify any stipulations that may apply.

Alternative A: No Action

Reject Leasing

Under the No Action alternative, the Forest Supervisor would deny a consent determination for all of the three pending lease applications. This alternative is required by the National Environmental Policy Act and also serves as an environmental baseline for comparing the action alternative(s).

Alternative B: The Proposed Action

Recommend Leasing with Stipulations

The project area is 7,680 acres, encompassing most of Bell Island as well as a portion of the Cleveland Peninsula on the adjacent mainland in the Alexander Archipelago of Southeast Alaska. Bell Island is located near the southeastern end of the Alaskan Panhandle, approximately 43 miles north of Ketchikan. Lease boundaries could be adjusted in the decision to avoid unacceptable impacts on sensitive resources. The three pending leases (Figure 1-1) are described as follows:

- **Lease AK 084543** includes approximately 2,560 acres comprised of four contiguous sections, as follows:
 - T68S R89E S36; Section 36 contains a private inholding approximately 2.9 acres in the SE quadrant.
 - T68S R90E S29, S30, S31; Section 31 contains a private inholding approximately 11 acres in the NW quadrant.
- **Lease AK 084544** includes approximately 2,560 acres comprised of the following four contiguous sections:
 - T68S R90E S15, S21, S22, and S28.
- **Lease AK 084545** includes approximately 2,560 acres comprised of the following four contiguous sections:
 - T68S R90E S12, S13, S14; T68S R91E S7.

The Bell Island Hot Springs and seaplane ramp, which are located on the private lands within the lease areas, are the only privately developed uses within the pending lease applications. These private lands and developed uses are within Lease Application AK

084543. The Swan Lake-Tyee Lake Intertie Project 138-kilovolt (kV) electric transmission line also runs north through Lease Application AK 084544 (Figure 1-1).

Under Alternative B, the Forest Supervisor would issue a consent determination for the three pending lease applications, and identify any stipulations that should be added to the lease. These lease stipulations would be included in the Forest Service ROD of the Final SEIS. The BLM must include Forest Service stipulations in leases which are issued on National Forest System lands.

Lease stipulations are major or moderate constraints applied to a new lease. A lease stipulation is a condition of lease issuance that provides a level of protection for other resource values or land uses by restricting lease operations during certain times or at certain locations or by mitigating unacceptable impacts to an extent greater than what standard lease terms or conditions offer. A lease stipulation is an enforceable term of the lease contract, supersedes any inconsistent provisions of the standard lease form; and is attached to and made a part of the lease. Lease stipulations further implement the BLM's regulatory authority to protect resources or resource values. Where the agency determines that a particular stipulation may be inappropriate for a planning area, the procedures for exceptions, waivers, and modifications would be followed as discussed in Chapter 2, Sec. 2.2.2, of the PEIS.

A roadless area stipulation was developed in the PEIS (UDSA 2008 p. 2-20). This stipulation is a non-discretionary restriction to be placed on any lease within NFS IRAs. Specifically, this non-discretionary restriction states that no new road construction or reconstruction would be allowed in designated roadless areas. Changes to this stipulation could occur only if future legislation or regulation changed the roadless area designation; then at that time, the restriction could be revised along with any appropriate environmental review. Additional conditions of approval regarding the cutting, removal, or sale of timber associated with the exploration or development of a lease may be required on a project-specific basis.

Reasonable Foreseeable Development Scenario

Reasonable foreseeable development for geothermal resources involves four sequential phases: 1) exploration, 2) drilling, 3) utilization, and 4) reclamation and abandonment. The success or failure of each phase affects the implementation of subsequent phases, and, therefore, subsequent environmental impacts (UDSA 2008 p. 2-40). The application of the non-discretionary Roadless Area Stipulation does not change the Bell Island leases RFD scenario described in Chapter 11, Section 11.2 of the PEIS, but does change the assumptions. For this SEIS, the Forest Service acknowledges the following assumptions:

- Surface development may be reduced on the portions of Bell Island leases that are on NFS lands because the Roadless Area Stipulation would apply.
- Development of the single, 20 megawatt (MW) binary power plant would need to be accomplished without the addition of new roads or reconstruction of existing roads on NFS lands.
- The RFD did not estimate disturbance resulting from construction of transmission lines because the amount of disturbance would depend on where a geothermal power

plant was sited. Any disturbance resulting from power line construction if a geothermal power plant were sited would be in addition to the area estimated in the PEIS.

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Chapter 3. Affected Environment and Environmental Consequences

Introduction

This chapter describes the current condition of the physical, biological and human resources that could be affected by the Proposed Action and then discloses the direct, indirect, and cumulative effects of the alternatives described in Chapter 2 of this SEIS. The Roadless Stipulation identified in Volume I, Chapter 2 of the PEIS has been incorporated into the Proposed Action.

Section 11.3 of the PEIS (Chapter 11 Volume II) corresponds to Chapter 3 of this SEIS. Section 11.3 identified the resources that were not affected by the proposed action and analyzed the following resources that could be affected: land use and recreation, geologic resources, energy and minerals, soils, water resources, air quality and climate, vegetation, fish and wildlife, threatened, endangered and sensitive species, cultural resources, tribal interests, visual resources, socioeconomics, and noise. Potential direct and indirect impacts from implementation of the RFD scenario within the Bell Island leases to those resources are discussed in Section 11.3 of the PEIS.

For this SEIS, Chapter 3 will address only the resources not previously analyzed (e.g., roadless, subsistence) or where conditions have changed (e.g., socioeconomics) since the PEIS was issued, and summarize those previously analyzed resources listed above in relation to the Roadless Stipulation. Several assumptions were used for this analysis. These assumptions are as follows:

- Based on the non-discretionary Roadless Stipulation developed in the PEIS, and the fact that the Bell Island leases do not have existing roads, full-scale development would most likely occur on the private lands within Lease Area AK 084543.
- Additional site-specific NEPA analyses would occur at the project level (e.g., exploration and development) when a Plan of Operations is submitted by the applicant. The BLM would be the lead agency, and the Forest Service a cooperating agency.
- At this time, the Forest Service Chief has reserved authority to authorize road construction and reconstruction and/or the cutting, sale, or removal of trees in inventoried roadless areas. Although the roadless stipulation will apply to any subsequent exploration and development activities, these activities may include the incidental cutting, sale, and/or removal of trees.
- The pending lease applications sites are located within Ketchikan Gateway Borough, Alaska and are subject to state and local regulations, as described in Section 11.1.2 of the PEIS.
- Application of Best Management Practices (BMPs) from Appendix B of the PEIS ROD (USDA 2008a) would be incorporated as appropriate into the permit

application by the lessee or would be included in the approved NEPA decision use authorization by the BLM as conditions of approval.

Land Use and Recreation - Inventoried Roadless Areas

Current land use and recreation opportunities on the Bell Island leases are described in Chapter 11.3.2 of the PEIS. These leases are within the North Cleveland IRA (# 529), which is comprised of approximately 105,270 acres. The three pending leases occupy approximately 7.3 percent of the North Cleveland IRA. This IRA was not discussed in the PEIS and will be addressed in this SEIS.

Inventoried roadless areas are defined as undeveloped areas typically exceeding 5,000 acres that meet the minimum criteria for wilderness consideration under the Wilderness Act. These areas were inventoried during the Forest Service's Roadless Area Review and Evaluation (RARE II) process, and during subsequent assessments and forest planning analysis. Including congressionally designated Wilderness areas, the Tongass National Forest is currently more than 90 percent roadless.

The 2003 SEIS for the Tongass Forest Plan, Roadless Area Evaluation for Wilderness Recommendations, Appendix C (USDA 2003) discusses the roadless values of the North Cleveland IRA. This IRA represents the typical qualities of many IRAs in Southeast Alaska. The description of the North Cleveland IRA in the 2003 SEIS is used in this SEIS to describe the existing condition, to help facilitate the reader's understanding of the potential impacts to the roadless characteristics based on the RFD scenario provided in the PEIS, Volume II, Chapter 11, given the lease stipulations that would be required for the leases inside the IRA. The following discussion focuses on the unique or outstanding qualities and roadless characteristics of the North Cleveland IRA in general terms, but more narrowly expressed to Bell Island when available.

Affected Environment

The North Cleveland IRA is located north of Revillagigedo (Revilla) Island. The IRA includes part of the Cleveland Peninsula on the mainland and a number of islands in Behm Canal, which includes Bell Island. Behm Arm and Behm Narrows border the IRA to the south (Figure 1-1). The IRA is characterized by very rugged terrain. The steep mountain slopes cause deeply incised drainages. There are large lakes at the headwaters of the larger streams and numerous smaller lakes in most drainages. There are a few small glaciers. Elevations within the North Cleveland IRA range from sea level to 4,000 feet. The major islands in Behm Canal are less rugged than the mainland, but are characterized by steep slopes starting at saltwater and ranging to 3,000 feet (USDA 2003 p. 2-557).

Biological Values

High quality or undisturbed soil, water, and air: The IRA is bordered by large roadless areas and saltwater (USDA 2003 p. 2-551). Within this IRA, ecological processes are intact and operating in an undisturbed condition. In combination with the adjacent roadless areas and designated Wilderness areas, this large expanse of undeveloped roadless lands has outstanding fish and wildlife values (USDA 2003 p. 2-556). Due to the undeveloped nature of the Bell Island lease area, surface water resources are

expected to be pristine with little to no contamination and air quality is considered to be good (USDA 2008 pp. 11-19 to 11-22).

Diversity of plants and animal communities: *Vegetation Resources:* Lands within the Bell Island lease sites rise from approximately sea level to 2,235 feet in elevation. The vegetation is typical Southeast Alaska coastal temperate rain forest. The dominate plant community in the lease area is old-growth conifer forests: primarily western hemlock (*Tsuga heterophylla*) and Sitka spruce (*Picea sitchensis*), with a scattering of mountain hemlock (*Tsuga mertensiana*), and western redcedar (*Thuja plicata*). Blueberry (*Vaccinium* sp.), Sitka alder (*Alnus viridis* ssp. *sinuata*), devils club (*Oplopanax horridus*), and salal (*Gaultheria shallon*) are common shrubs in the lease area and throughout the Tongass National Forest. Other understory species include dogwood (family *Cornaceae*), single delight (*Moneses uniflora*), and American skunk cabbage (*Lysichiton americanus*) (USDA 2008 p. 11-23).

Because of the high rainfall and resulting high humidity, mosses grow in great profusion on the ground, on fallen logs, on the lower branches of trees, and in forest openings. Muskeg (bog plant) communities, dominated by sphagnum mosses and sedges, occur on flat areas of Bell Island (Huetten 2008) (USDA 2008 p. 11-23). With the exception of old-growth areas, the majority of Bell Island is wetland. Interior areas are dominated by freshwater emergent wetland, giving way to a freshwater forested/shrub wetland that continues up to forest edges. Adjacent mainland coastal areas are characteristically similar (USDA 2008 p. 11-24).

Fish Resources: There are two streams located within the lease areas that are cataloged as Alaska Department of Fish and Game (ADF&G) anadromous streams; Bell Creek (#101-80-10990) and an unnamed stream segment (#101-80-10950) on the adjacent mainland. Bell Creek supports pink, coho, and chum salmon, steelhead and cutthroat trout, and Dolly Varden char and the other unnamed stream supports only pink salmon. Two lakes lie in the center of the island within lease sites AK 084543 and 084544, connected by a stream that runs lengthwise towards the western tip of the island and emptying into the ocean. Two freshwater ponds occur within lease sites AK 084544 and 084545.

Wildlife Resources: This IRA has habitat for deer, brown and black bear, otter, beaver, marten, mink, loon, wolves, and common waterfowl. Mountain goats, mountain lions, and moose can also be found here. Trumpeter swans use the major saltwater inlets and freshwater lakes as resting areas during their migrations and as winter habitat. Bald eagles, Canada geese, and Pacific loons nest within the IRA. Marbled murrelets and northern goshawks can be found in the IRA, but no nests have been located (USDA 2003 p. 2-553).

Habitat for threatened, endangered, proposed, candidate, and sensitive species, and for those species dependent on large, undisturbed areas of land: Humpback whales (endangered) occur and Steller's sea lion (threatened) are likely to occur within the marine waters within the pending lease areas. Yellow-billed loons (candidate species) have also been documented in Anchor Pass on the northeast side of Bell Island. Alaska

Region sensitive wildlife species with potential to occur on Bell Island includes the Queen Charlotte goshawk (UDSA 2009).

The Tongass National Forest has sixteen vascular plants designated as sensitive on the Alaska Regional Forester's revised Sensitive Plant Species List of June 2002 (revised February 2009). These sixteen plant species are either known to exist or are suspected to exist in the proposed lease area and are listed in Appendix A, Table A-1 of this SEIS. There are no federally listed or proposed threatened or endangered plants that are expected to occur on Bell Island (UDSA 2008 p. 11-30).

Physical Values

Sources of public drinking water: The aquifers of Alaska have never been mapped, except in the immediate vicinity of some of the towns and cities. Several coarse-grained quaternary deposits that may locally comprise aquifers are found within the region of the lease site; however, none are known to occur within or immediately adjacent to the lease sites (UDSA 2008 p. 11-20). There are no sources of public drinking water within the lease area.

Other locally identified unique characteristics: The main attraction of North Cleveland IRA is its remoteness and outstanding scenery. Excellent freshwater fishing also attracts people to the IRA. McDonald Lake (approximately 10 miles east of Bell Island on the Cleveland Peninsula) has historically supported one of the largest sockeye runs in Southeast Alaska. Several of the bays and islands were used by early commercial fishing interests and, in recent times, individual recreation users and commercial recreation (lodges on Bell Island and in Yes Bay). These land uses are closely tied to the excellent salmon fishing in the adjacent saltwater and streams (USDA 2003 p. 2-549) Bailey Bay Hot Springs and the small glaciers are special features of the IRA. Bailey Bay Hot Springs have the highest surface temperature of any hot spring in Southeast Alaska, and are designated as a Special Interest Area (Bailey Bay Hot Springs Recreation Area) in the Tongass Forest Plan. Another special value of this IRA is that it lies within a much larger mainland roadless area that includes all adjacent areas and extends from the southern tip of Southeast Alaska to Skagway. As such, it contributes to one of the largest roadless land areas in the temperate region of North America (USDA 2003 pp. 2-551 to 2-558).

Social Values

Primitive, semi-primitive non-motorized and semi-primitive motorized classes of dispersed recreation: The IRA provides very high opportunity for solitude and outstanding opportunity for primitive recreation. There is one cabin located just south of the lease application AK 084545 and a private lodge located on the southeastern end of Bell Island within lease application AK 084543. The private lodge is inactive but catered in the past to sport fishing, with clients also using the hiking trails to the inland lakes. A few outfitters/guides are permitted in the area of Bell Island, but none are currently using locations on the island itself. Some of the bear hunters have stopped along the shores to camp, sightsee or fish the waters surrounding Bell Island. Due to the vastness of the IRA, the high scenic quality, the abundance of saltwater and upland lake recreation attractions, and many trail opportunities, this IRA has outstanding opportunity for primitive recreation (USDA 2003 p. 2-552).

Reference landscapes: The North Cleveland IRA is part of a much larger roadless land area that includes all of Cleveland Peninsula through the Misty-Fiords National Monument Wilderness Area and north through the Stikine LeConte Wilderness Area. The other eight roadless areas that comprise this larger roadless land area are Frosty (#210), Cleveland (#528), Anan (#209), Bradfield (#208), Harding (#207), Cone (#206), Aaron (#205), and Madan (#204). The IRA contributes to one of the largest roadless land areas in the temperate region of North America (USDA 2003 p. C2-558) and may serve as a useful reference landscape in comparison to other more intensely managed or developed areas. There are no Research Natural Areas (RNAs) within the IRA (USDA 2003 p. 2-553).

Natural appearing landscapes with high scenic quality: The majority of North Cleveland IRA is unmodified and retains a natural appearance. Exceptions to this include the five recreation cabins, shelters, hiking trails, small areas where beach logging has occurred and the Swan Lake-Tyee Lake Intertie Project 138-kV electric transmission line, which runs north through Lease Application AK 084544 (Figure 1-1). The IRA displays natural characteristics when viewed from nearby water travel routes and from inside the area itself (USDA 2003 p. 2-551).

Traditional cultural properties and sacred sites: A number of prehistoric and historic sites have been identified through archaeological surveys, oral history and historic documents. The interior of this IRA has seen little influence of human activity. Some coastal locations were occupied by prehistoric and historic Native cultures.

Desired Condition

The 2008 Forest Plan establishes forest-wide multiple use goals and objectives and allocates certain areas to Land Use Designations (LUDs) for different uses with associated management prescriptions. The proposed leases fall within the Semi-Remote Recreation LUD (USDA 2008b p. 3-63).

Areas in the Semi-Remote Recreation LUD are characterized by generally unmodified natural environments. Ecological processes and natural conditions are only minimally affected by past or current human uses or activities. Users have the opportunity to experience a moderate degree of independence, closeness to nature, solitude, and remoteness, with some areas offering motorized opportunities and others non-motorized opportunities (except for the traditional uses of boats, aircraft, and snowmachines). Interactions between users are infrequent. Facilities and structures may be minimal or occasionally may be larger in scale, but will be rustic in appearance, or in harmony with the natural setting. For a more complete discussion of goals, objectives and LUDs for the lease area please refer to the Roadless Resource Report project file located in the planning record.

Environmental Consequences

Alternative A – No Action

Under Alternative A, the No-Action Alternative, the Forest Supervisor would deny a consent determination for all of the three pending lease applications.

Direct and Indirect Effects

There would be no direct or indirect effects to roadless resources from taking no action. The leases would not be offered to the applicant and the geothermal resources would not be developed.

Cumulative Effects

There would be no cumulative effects to roadless resources from taking no action.

Alternative B – Proposed Action

Alternative B, Leasing with Stipulations, the Forest Supervisor would recommend a consent determination for the three pending lease applications, which would, at a minimum, include the non-discretionary Roadless Area Stipulation. Specifically, no new road construction or reconstruction would be allowed within the lease area on National Forest System lands. If future legislation or regulation changes the roadless area designation, the restriction could be revised along with any appropriate environmental review.

Direct and Indirect Effects

The Proposed Action of consent to lease would not cause any direct impacts to roadless resources; however, the anticipated geothermal exploration and development activities likely to follow leasing could potentially result in indirect impacts. Since there are no existing roads within the Bell Island leases, any potential long-term development would likely be limited to the privately owned land on the western end of the island.

As shown in Table 3-1, below, the pending leases occupy approximately 7.3 percent of the North Cleveland IRA total acreage, while full scale development would impact less than one tenth of a percent. Based on the RFD scenario, it is likely that one geothermal power plant of 20 MW would be developed in the lease area. Exploration activities for a 20 MW binary power plant is expected to involve approximately 6 temperature gradient holes disturbing approximately 0.15 acres each, for a total disturbance of approximately 1 acre (UDSA 2008 p. 11-11).

Table 3-1 North Cleveland IRA Acreage

North Cleveland IRA Acreage	Proposed Leases Acreage	% of IRA Acreage Impacted	Projected Project Acreage From RFD	% of Project Acreage Impacted
105,270	7,680	7.3%	10	<0.01%

Full development of a 20 MW binary power plant would disturb approximately 10 acres. Unless future regulations change, this disturbance would likely occur on the privately owned land since there currently are no roads within the Bell Island leases and roads are generally required for this level of development. The potential direct effects from development on other affected resources within the Bell Island leases are discussed in Volume II, Chapter 11 of the PEIS. The potential indirect impacts to roadless characteristics from the full scale development scenario, if it were to occur on private lands adjacent to the IRA, are discussed below.

The potential exploration, drilling and utilization of geothermal resources would impact the natural features within the project area, as described in the other relevant sections of the PEIS (Chapter 4 and 11). Potential impacts to naturalness from development and the associated surface disturbance on private lands within the Bell Island leases may include impacts to water quality from ground disturbance, discharge of geothermal fluids, stormwater runoff, potential onsite spills of petroleum products or other chemicals during construction and operation, and impacts to air quality from fugitive dust and exhaust during construction and operation. The site-specific NEPA analyses for any future exploration and development of geothermal resources would analyze these potential impacts and their effect on the roadless area values of the North Cleveland IRA.

In addition to the non-discretionary roadless area stipulation, site-specific analysis would minimize many of these impacts with applicable BMPs and mitigation measures, as described in Appendix B Best Management Practices – Mitigation Measures of the PEIS ROD (USDA 2008a) for any proposed project development. Specifically, the BMPs and mitigation measures for Water Resources, Air Quality, Visual Mitigation and Visual Design Considerations would help to maintain the roadless characteristics within the IRA (USDA 2008a, Appendix B).

Exploration, drilling, and utilization of geothermal resources with associated development on private lands within the IRA has the potential to degrade the undeveloped character within and adjacent to the Bell Island lease area. The undeveloped character and scenic qualities could be impacted by the presence of vehicles, and the construction and ongoing operation of facilities, as described in detail in the PEIS, Chapter 2. However, since buildings and recreation developments are already present at the inactive private lodge on Bell Island (which are tucked back in a cove), development of the geothermal plant in the same location would not represent a major change to the undeveloped character that presently exists.

Cumulative Effects

The Proposed Action by itself would not contribute to cumulative impacts on roadless resources; however, anticipated future actions following leasing would potentially result in indirect impacts to the North Cleveland IRA. Past development within the IRA includes five existing recreation cabins, shelters, hiking trails and small areas where beach logging has occurred. The Swan Lake-Tyee Lake Electrical Intertie, a 138-kV electric transmission line, is also located within the IRA.

Development of the Bell Island lease sites in combination with these past activities would cumulatively contribute to the trend in land use change on the Bell Island lease sites from undisturbed conditions to developed conditions, including industrial uses. This trend in development would impact the roadless characteristics of areas that are natural, undeveloped and provide outstanding opportunities for solitude. However it is estimated that these impacts would be less than one tenth of a percent of the total lease area. Changing from undeveloped to developed would be consistent with the area's allocation to the Semi-Remote Recreation LUD in the 2008 Tongass Forest Plan.

Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

The proposed action has been reviewed for compliance with the 2008 Tongass National Forest Land and Resource Management Plan and has been determined to be consistent with the Semi-Remote Recreation Land Use Designation.

Subsistence

In Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA), subsistence is defined (in part) as “the customary and traditional uses by rural Alaska residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation” (ANILCA Sec. 803). ANILCA provides for the continuation of these uses “consistent with sound management principles, and the conservation of healthy populations of fish and wildlife” (ANILCA, Sec. 802). The Act also states, in part, under Section 804 that “... the taking on public lands of fish and wildlife for non-wasteful subsistence uses shall be accorded priority over the taking on such lands of fish and wildlife for other purposes.” For many rural Alaskans, subsistence is a lifestyle reflecting deeply held attitudes, values and beliefs.

Section 810 (a) of ANILCA requires the Forest Service to evaluate the potential effects on subsistence uses and needs, followed by specific notice and determination procedures for any federal action to “withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands” in Alaska. An ANILCA 810 analysis typically focuses on those food-related resources most likely to be affected by habitat degradation associated with management activities, and addresses three factors related to subsistence uses:

- Access to resources;
- Resources distribution and abundance; and
- Competition for the use of resources.

The evaluation determines whether subsistence uses within the project area may be significantly restricted by any of the proposed alternatives. The Alaska Land Use Council defines a significant restriction on subsistence uses as:

“A proposed action shall be considered to significantly restrict subsistence uses if, after any modification warranted by consideration of alternatives, conditions, or stipulations, it can be expected to result in a substantial reduction in the opportunity to continue uses of renewable resources. Reductions in the opportunity to continue subsistence uses generally are caused by: reductions in abundance of, or major redistribution of resources; substantial interference with access; or major increases in the use of those resources by non-rural residents.”

The 2008 Forest Plan Final Environmental Impact Statement (FEIS) provides a comprehensive analysis of subsistence resources and potential effects, both Tongass-wide and for each rural community of Southeast Alaska. Under full implementation of the Forest Plan, the only subsistence resource that may be significantly restricted in the future is subsistence use of deer (USDA 2008b, pp. 3-224 to 3-229).

Affected Environment

The project area is within the Metlakatla community use area (USDA 2008b p. 3-647), the Ketchikan community use area (USDA 2008b p. 3-636), and the Saxman community use area (USDA 2008b p. 3-680). Although use occurs, Bell Island is not one of the high use areas where Metlakatla or Saxman residents obtain 75 percent of their deer (USDA 2008b). Deer accounted for 15 percent of per capita subsistence harvest by Metlakatla residents and 18 percent of per capita subsistence harvest by Saxman residents. Ketchikan is currently classified as a non-rural community. Saxman's status is currently rural. Non-rural residents do not have a subsistence priority under ANILCA. However, rural residents of the Ketchikan community use area (e.g., Loring, Unuk River, and Bell Island) use this area as well as the surrounding Tongass for hunting and fishing. Subsistence activities rural residents engage in include fishing, deer, bear, moose, and waterfowl hunting, and gathering of shellfish and berries. Traditional subsistence use by some rural residents also includes gathering medicinal plants, seaweed, spruce roots and cedar bark (2008b pp. 3-419, 3-636).

Bell Island is located within Game Management Unit (GMU) 1A. Game management unit 1A consists of all drainages south of the latitude of Lemesurier Point including all drainages into Behm Canal and excluding all drainages of Ernest Sound. Deer harvest in GMU 1A has generally shown a decline from 1997 to 2007, with the number of hunters and hunter effort also decreasing over this same period (ADF&G 2011). This decline is attributable to dynamic deer populations which fluctuate considerably with the severity of the winters. When winters are mild, deer numbers generally increase. Periodically, however, a severe winter will cause a major decline in the population. Despite this declining trend, the average number of days required to harvest a deer, has remained constant across the entire period (ADF&G 2011).

Access to Bell Island is by seaplane or boat to a privately held ramp on the western end of the island or along the coast on NFS lands. Due to lack of access to the project area, visitor use is minimal. A former trail that existed on Bell Island is no longer in use and has been abandoned (USDA 2008). Regardless of absence of roads and trails on Bell Island, the freshwater fishing sources do attract some people to the area.

Desired Condition

The 2008 Forest Plan indicates that the desired condition for subsistence is when "rural residents have opportunities to participate in subsistence activities and to harvest subsistence resources in accordance with the direction in the Alaska National Interest Lands Conservation Act of 1980 (ANILCA)." (USDA 2008b p. 2-2).

Two forest-wide goals are provided.

- Provide for the continuation of subsistence uses and resources by all rural Alaskan residents (USDA 2008b p. 2-7); and
- Maintain habitat capability sufficient to produce wildlife populations that support the use of wildlife resources for sport, subsistence, and recreational activities (USDA 2008b p. 2-9).

A forest-wide objective directs that managers “evaluate and consider the needs of subsistence users in making project land management decisions” (USDA 2008b p. 2-7).

Environmental Consequences

Alternative A – No Action

Under Alternative A, the Forest Supervisor would deny a consent determination for all of the three pending lease applications. The leases would not be offered to the applicant and the geothermal resources would not be developed.

Direct and Indirect Effects

Under Alternative A, the Forest Supervisor would not recommend leasing. The leases would not be offered to the applicant and the geothermal resources would not be developed. Consequently there would be no direct or indirect effects on the access to, distribution and abundance of, or competition for subsistence resources.

Cumulative Effects

There would be no cumulative effects to subsistence resources from taking no action.

Alternative B – Proposed Action

Under Alternative B, Leasing with Stipulations, the Forest Supervisor would recommend a consent determination for the three pending lease applications, with stipulations identified in the ROD for the Final SEIS.

Direct and Indirect Effects

The RFD scenario for the Bell Island leases predicts one 20 MW binary power plant to be developed. Assuming that a commercially viable resource is found, an average of 0.74 person-years per MW annually is required for geothermal power plant operation and maintenance (USDA 2008 p. 4-165). This equates to an estimated increase of approximately 15 persons annually or 15 permanent full-time jobs. In addition, a total of 10 acres would be needed for a 20 MW binary power plant. This acreage does not include housing for the permanent employees.

Any new facility development and associated habitat reductions are assumed to increase competition and disrupt natural distribution of game species. Therefore, changes in access, abundance, and competition were considered.

Access

Access to the project areas could increase if geothermal facilities such as docks were open to public use. However, roadless stipulations would prevent access development on federal lands (NFS lands) within the project area leaving the majority of Bell Island and the adjacent Cleveland Peninsula in the existing primitive condition.

Abundance and Distribution

The loss of 10 acres of habitat for the geothermal power plant plus the additional small loss for housing would be minimal compared to GMU 1A or community use areas. While some very localized displacement of subsistence resources could occur, it is not expected to have a measurable effect on deer or other subsistence resource abundance or distribution.

Competition

The addition of 15 geothermal power plant personnel (see Socioeconomics, below) could increase the competition for subsistence resources on Bell Island. However, this impact to Bell Island and the adjacent portion of Cleveland Peninsula would be negligible compared to the community use areas for the three affected communities. Due to the lack of access on NFS lands, visitor use is expected to remain similar to current levels.

Cumulative Effects

Anticipated impacts to abundance or distribution of wildlife or fisheries resources, or to competition for or access to wildlife or fisheries subsistence resources are not expected under Alternative B. Based on minimal anticipated impacts to abundance, distribution, access and competition, Alternative B would have minimal impact on subsistence resources.

ANILCA Compliance

The actions proposed in this document have been examined to determine whether they are in compliance with ANILCA Section 810. Standards used for the review include:

- Alaska National Interest Lands Conservation Act (1980);
- Tongass Land and Resource Management Plan (1997);
- Tongass Land and Resource Management Plan Amendment (2008);
- USDA Forest Service Subsistence Management and Use Handbook (FSH 2609.25); and
- USDA Forest Service Roadless Area Final Rule (2001).

The actions have been determined to be in compliance with these standards, and with ANILCA. This evaluation concludes that the action shall not result in a significant restriction of subsistence uses.

Socioeconomics and Environmental Justice

Affected Environment

The analysis area used in this review differs from the area used in the PEIS. In the 2008 PEIS, the social and economic study area was the Prince of Wales-Outer Ketchikan Borough. However, in 2008 much of the Borough, including Bell Island, was annexed to the Ketchikan Gateway Borough. Therefore, this analysis updates the social and economic conditions using data for the Ketchikan Gateway Borough.

Population and Demographics

The majority of Ketchikan Gateway Borough's population (56.7 percent) resides in the city of Ketchikan, which is approximately 40 miles south of Bell Island (U.S. Census Bureau 2009). Table 3-2 lists data for 1990, 2000, and 2010. Between 1990 and 2010, the Ketchikan Gateway Borough lost population; in contrast, the State of Alaska grew during both decades.

Table 3-2. Population Change, 1990-2000 and 2000-2010

	1990	2000	% Change, 1990-2000	2010	% Change, 2000-2010
Ketchikan Gateway Borough	13,828	14,070	1.8%	13,477	-4.2%
Alaska	550,043	626,932	14.0%	710,231	13.3%

Source: U.S. Census Bureau, 1990, 2000, and 2010

Table 3-3 displays the number of people per square mile in the State and Borough. The Ketchikan Gateway Borough is more densely populated than the State as a whole; however, the city of Ketchikan accounts for much of this density (the city has approximately 2,000 people per square mile). Outside of Ketchikan, the Borough is quite rural, with fewer than 5 people per square mile (U.S. Census Bureau 2010). Low population density often corresponds with less developed infrastructure (Horne and Hayes 1999).

Table 3-3. Population Density

Area	People/Sq. Mile
Ketchikan Gateway Borough	10.9
Alaska	1.2

Source: U.S. Census Bureau 2010

Employment and Income

Government is the largest employment sector in the Borough, accounting for more than one-quarter of employment. In addition to government, retail trade (15%), transportation and warehousing (10%), health and social services (9%), and accommodation and food services (8%) are the largest sectors in terms of employment (MIG 2009). This

employment distribution is consistent with an area that has high levels of public land ownership, a relatively large retiree population, and a tourism-driven economy.

Table 3-4 lists per capita income. Ketchikan Gateway Borough and Alaska have approximately equivalent per capita income, which exceeds national per capita income by approximately \$2,000.

Table 3-4. Per Capita Income, 2009 US Dollars

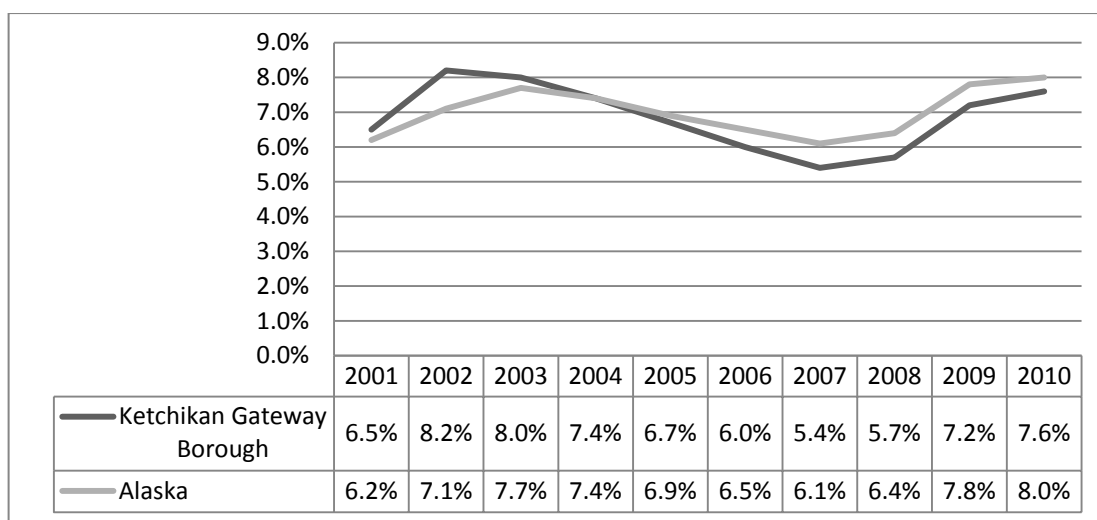
Area	Per Capita Income
Ketchikan Gateway Borough	\$29,867
Alaska	\$29,382
United States	\$27,041

Source: U.S. Census Bureau 2009

The national unemployment rate has hovered between nine and ten percent in recent years. The State and Borough have lower unemployment rates than the nation, although both have experienced the same trend of increasing unemployment since 2007.

Figure 3-1 shows unemployment trends for the State and Borough during the past decade.

Figure 3-1: Annual Unemployment Rate, Not Seasonally-Adjusted



Source: U.S. Bureau of Labor Statistics 2011

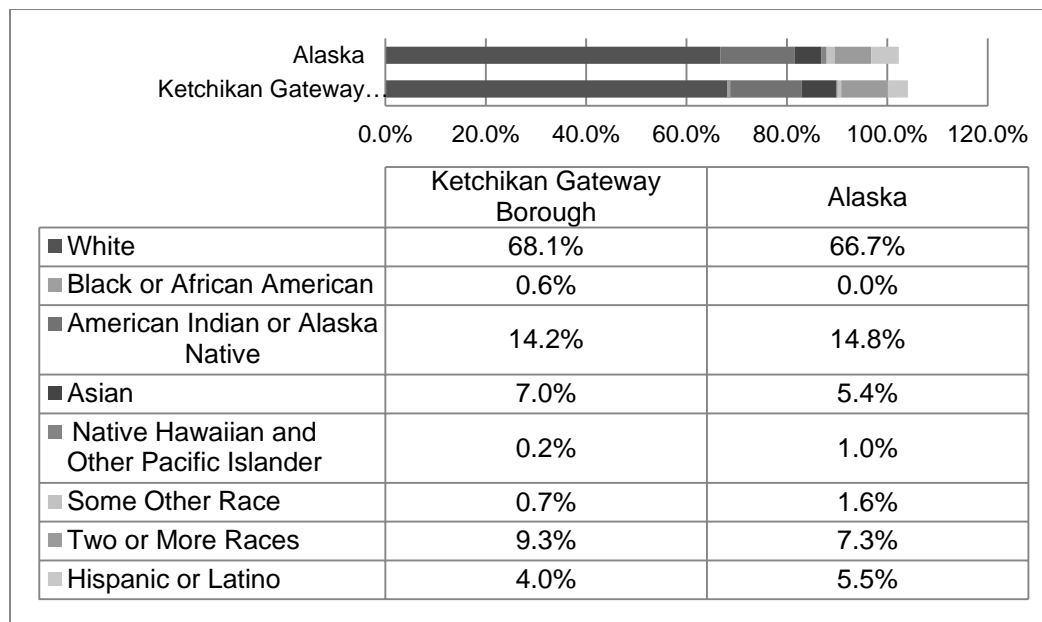
Environmental Justice

Executive Order (EO) 12898 directs federal agencies to analyze potential disproportionate adverse impacts on minority and low-income groups from major federal actions.

As shown in Figure 3-2, the racial and ethnic composition of residents in the Ketchikan Gateway Borough is similar to the racial and ethnic composition of Alaska residents.

American Indians and Alaska Natives form the largest minority group in both the Borough and the State.

Figure 3-2: Race and Ethnicity



Source: U.S. Census Bureau 2010

Table 3-5 presents poverty data for the Borough, State, and nation. Both Ketchikan Gateway Borough and the State of Alaska have proportionally fewer people living in poverty than the nation. These data suggest that the Borough has relatively low levels of economic vulnerability and conditions in the Borough mirror State economic conditions.

Table 3-5. Poverty Rate

Area	% People Living in Poverty
Ketchikan Gateway Borough	9.3%
Alaska	9.6%
United States	13.5%

Source: U.S. Census Bureau 2009

Environmental Consequences

Alternative A – No Action

Under Alternative A, the Forest Supervisor would deny a consent determination for all of the three pending lease applications.

Direct and Indirect Effects

The leases would not be offered to the applicant and the geothermal resources would not be developed. Alternative A would have no effect on social and economic conditions in Ketchikan Gateway Borough. Low-income and minority residents would not be affected.

Cumulative Effects

No cumulative effects would occur as a result of Alternative A.

Alternative B – Proposed Action

Under Alternative B, Leasing with Stipulations, the Forest Supervisor would recommend a consent determination for the three pending lease applications, with stipulations identified in the ROD for the Final SEIS.

Direct and Indirect Effects

The PEIS estimates that each MW of geothermal capacity would support 3.1 jobs during the construction phase and 0.74 jobs during the operations and maintenance phase (USDA 2008 pp. 4-140, 4-142). Using the RFD scenario estimate of a 20 MW binary power plant (USDA 2008 p. 11-11), approximately 62 jobs would be supported during plant construction and 15 jobs would be supported during operations and maintenance. The number of jobs that would be supported by the proposed geothermal leases is contingent on the extent of geothermal capacity developed. This capacity is unknown; therefore, precise estimates of economic impact are unavailable.

Lease rentals and royalties collected by the United States are shared with the States and Counties. Fifty percent of the revenue collected goes to the State, an additional 25 percent goes to the county (or Borough in the case of Alaska), and 25 percent is retained by the United States Treasury.

Low-income and minority residents are not expected to be disproportionately adversely affected under Alternative B. The employment associated with geothermal exploration and development could increase employment opportunities in the local area, which could improve the economic well-being of unemployed and underemployed residents.

Cumulative Effects

Anticipated future actions associated with the development of geothermal resources could contribute to increased employment opportunities expected under Alternative B.

Resources Previously Analyzed

This discussion is a summary of the resources analyzed in the 2008 PEIS. The resources are: geologic and seismicity, energy and minerals, soils, water, air quality and atmospheric values, vegetation, fish and wildlife, threatened, endangered and sensitive species, cultural, tribal interests, visual, and noise. To view the complete discussion of each resource the reader should refer to Volume II, Chapter 11 of the PEIS.

Affected Environment

The Bell Island leases lie within the Pacific Mountain System portion of the Pacific geological province. The Pacific province is one of the most geologically young and tectonically active regions in North America. A faultline bisects Bell Island lengthwise. Soils within the lease sites are predominantly McGilvery-Lithic Humicryods association at high slopes (75 to 100 percent), Histosols and shallow-Calamity-Rock Outcrop associations, with typical slopes of 35 to 75 percent, and Cryohemist, Cryosaprist and Staney soils at low slopes (zero to 35 percent).

Surface water features at the lease sites are small ponds and lakes concentrated in the north-central region of Bell Island. There are no state-designated impaired water bodies on Bell Island. Due to the undeveloped nature of Bell Island, surface water resources are expected to be pristine, with little to no contamination. The air quality status of the area has been unclassified and due to the remoteness of the lease sites, air quality is considered good (USDA 2008 pp. 11-19 to 11-22).

The dominate plant community within the Bell Island leases is old-growth conifer forests. Old growth is characterized by a patchy, multi-layered canopy; trees that represent many age classes; large trees that dominate the overstory, standing dead (snags) or decadent trees, and higher accumulations of down woody material. Medium and high volume productive old-growth forests are concentrated along the coast of Bell Island and the neighboring mainland. A corridor of medium and high volume productive old-growth forests runs lengthwise through the island (Huette 2008). With the exception of these old-growth forests, the remainder of Bell Island is wetland. Interior areas are dominated by freshwater emergent wetlands, giving way to freshwater forested /shrub wetlands that continues up to forest edges. Adjacent mainland coastal areas are characteristically similar.

Records of invasive plant surveys within the Bell Island leases were not available (USDA 2008 p. 11-23). A number of high-priority invasive plant species documented within the Ketchikan-Misty Fiords Ranger District include Canada thistle (*Cirsium arvensis*), bull thistle (*Cirsium vulgare*), orange hawkweed (*Hieracium aurantiacum*), reed canarygrass (*Phalaris arundinacea*), and white sweet clover (*Melilotus alba Medikus*). There are no listed or proposed listed threatened or endangered plants expected on the Bell Island leases (UDSA 2008 pp. 11-22 to 11-26). The sensitive species list for Region 10 was revised in February 2009. Included in this SEIS in Appendix A, Table A-1 is an updated list of the sensitive plant species that are known or suspected to occur on the Tongass National Forest.

The region's wetlands provide habitat for numerous waterfowl. Two streams within Bell Island leases are cataloged as ADF&G anadromous streams. Twelve types of cavity and bark nesting birds, including the hairy woodpecker and red-breasted sapsucker occur in the lease areas. There are no federally listed species known or expected to occur on terrain within the lease areas. Humpback whales (endangered) occur and Steller's sea lion (threatened) are likely to occur in the marine waters within the project area. Yellow-billed loons (candidate species) have also been documented in Anchor Pass. There are four sensitive wildlife species on the Region 10 Forest Service sensitive species list (Appendix A, Table A-2). Noted bird species having the potential to occur within the project area include the bald eagle and the Queen Charlotte goshawk (UDSA 2009).

Cultural surveys revealed numerous rock art sites along the shorelines; however, the inland portions of the pending lease areas have had very minimal survey coverage. Two previously recorded cultural resources are located in parcels AK 084543 and AK 084545 of the project area, Bell Island Hot Springs (AK-Ket-007) and Anchor Pass State Weir (AK-Ket-097), and presence of other sites is possible (UDSA 2008 pp. 11-33 to 11-34). If a decision is made to consent to lease any future development site-specific NEPA

analysis of future proposals for ground-disturbing activities will determine whether these cultural resources would be affected and how best to avoid or mitigate the impacts.

During the project-specific analysis that would occur prior to exploration or development, additional areas may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Executive Order 13007, or other statutes and executive orders. The BLM will not approve any ground-disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects.

The landscape within and immediately surrounding the proposed lease areas is similar to the surrounding islands and mainland. The terrain has a strong undulating appearance. Vegetation uniformly covers the terrain and is of varying heights and maturity. Bays and inlets pierce in to low-lying coastal areas, and lakes fill in interior depressions. There are not any bridges to the lease sites, nor are there any developed uses modifying the characteristic landscape. Boats and seaplanes may be seen on the waters around Bell Island leases as it is a visual priority route for small boats and mid-sized tour boats. There are no sources of light in the lease areas (UDSA 2008 p. 11-38). Current sources of noise in the lease areas are limited to wind and wildlife (UDSA 2008 p. 11-43).

Environmental Consequences

Alternative A – No Action

Under Alternative A, the Forest Supervisor would deny a consent determination for all of the three pending lease applications.

Direct and Indirect Effects

The No Action alternative would have no impact on resources within the Bell Island lease area and would not conflict with the Forest Plan. The leases would not be offered to the applicant and the geothermal resources would not be developed.

Cumulative Effects

There would be no cumulative effects to the resources within the Bell Island lease area from taking no action.

Alternative B – Proposed Action

Under Alternative B, Leasing with Stipulations, the Forest Supervisor would recommend a consent determination for the three pending lease applications, with stipulations identified in the ROD for the Final SEIS.

Direct and Indirect Effects

The proposed action of consenting to lease, would not have any direct impacts to the resources within the Bell Island lease sites as no surface disturbance is associated with a consent to lease determination. Issuing the leases could indirectly result in the

development of geothermal resources including, construction of facilities, infrastructure, and transmission lines (UDSA 2008 p. 11-17) and increased human presence. These indirect impacts are discussed in Chapter 11 of the PEIS (UDSA 2008 pp.11-13 to 11-43) and are based on an RFD scenario (UDSA 2008 p. 11-11); one 20 MW binary power plant disturbing approximately 10 acres cumulatively. In addition, Chapter 4 of the PEIS discusses impacts in general terms of development of a 50 MW binary power plant. With the application of lease stipulations (Chapter 2, PEIS) and best management practices included in Appendix B (of the PEIS ROD) impacts from an installed geothermal power plant and ancillary facilities would be reduced.

Although bald eagles were delisted in 2007, they are still protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, therefore the following shall apply:

No occupancy or other surface disturbance will be allowed within 300 feet of bald eagle nests. Additional restrictions will apply if blasting or repeated helicopter flights are proposed within 1/2 mile of eagle nests (16USC 668; 50 CFR Part 22.26).

In addition, a geothermal proposal submitted to the BLM would be considered a federal action and as such would need to comply with federal laws and regulations. This is a requirement regardless of where development was proposed within the Bell Island lease sites; compliance with federal laws would be mandatory. At a minimum, Section 7 of the Endangered Species Act, which requires consultation with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), and Section 106 consultation with the State Historic Preservation Office (SHPO), would have to be conducted prior to any development as well as a site-specific NEPA analysis.

Cumulative Effects

The Proposed Action would not have any cumulative impacts in the lease area; however, anticipated future actions associated with development of geothermal resources could contribute to cumulative impacts in the Bell Island lease area. This development could contribute to cumulative soil erosion impacts in the Bell Island area resulting from past construction of the Swan Lake-Tyee Lake Electrical Intertie Project. Stormwater and erosion prevention measures outlined in Chapter 2 (lease stipulations) and Appendix B (best management practices) of the PEIS ROD would reduce these cumulative impacts.

Short-term Uses and Long-term Productivity

NEPA requires consideration of “the relationship between short-term uses of man’s environment and the maintenance and enhancement of long-term productivity” (40 CFR 1502.16). As declared by the Congress, this includes using all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans (NEPA Section 101).

Short-term uses and their effects are those that occur annually or within the first few years of project implementation. Long-term productivity refers to the capability of the

land and resources to continue producing goods and services long after the project has been implemented. A decision of consenting to lease would not cause any short or long-term effects to resources, but the plan of operations which would most likely follow leasing, could. Since the Bell Island leases are within an IRA, the non-discretionary Roadless Stipulation would apply. This would mean no new roads or reconstruction of existing roads would be permitted unless future legislation or regulations change the roadless area designation. Exploration of geothermal resources could be considered a short-term use of a renewable resource because 0.15 acres per pad would need to be cleared for each gradient hole. As a renewable resource, vegetation can be reestablished if the long-term productivity of the land is maintained. This long-term productivity would be maintained through the application of BMPs and mitigation measures described in Appendix B of the PEIS ROD (USDA 2008a) and any additional resource protection measures identified during subsequent project-specific NEPA that may be required for exploration and development of the geothermal resources.

Unavoidable Adverse Impacts

Recommending a consent to issuing leases would not result in any unavoidable adverse impacts. Subsequent development and operation of geothermal facilities could have such impacts. These impacts would be assessed during the permitting process and on a site specific basis.

If Bell Island leases were to be developed, expected adverse impacts could include:

- Loss of vegetation, habitat, soil, and soil quality;
- Visual impact from power plants and infrastructure; and
- Short-term and intermittent noise impacts from construction and maintenance activities could occur.

The BMPs (Appendix B PEIS ROD) and stipulations in Chapter 2 of the PEIS would reduce some of these effects.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Such commitments are considered irreversible because the resource has deteriorated to the point that renewal can occur only over a geologic time period, at a great expense, or not at all. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as power line rights-of-way (ROW). Such decisions are reversible, but the production opportunities foregone are irretrievable. Neither alternative is expected to result in irreversible or irretrievable effects

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Chapter 4. Consultation and Coordination

Preparers and Contributors

The Forest Service consulted the following individuals, federal, state, and local agencies, tribes and other organization and individuals during the development of this environmental impact statement:

List of Preparers and Contributors

<u>Name</u>	<u>Responsibility</u>
Tongass National Forest	
Susan Howle	Program Planning Specialist
Karen Iwamoto	Forest NEPA Coordinator
Sandy Powers	Forest Writer-Editor
Linda Pulliam	District NEPA Coordinator
Jill Reeck	District Wildlife Biologist
Rob Reeck	District Planning Staff Officer
Sarah Samuelson	Mineral Lead / Project Lead
TEAMS Enterprise Unit	
Jenny Fryxell	Hydrologist
Carol Hollowed	Environmental Coordinator / Interdisciplinary Team Leader
Delilah Jaworski	Social Scientist
Cass Klee	GIS Analyst
Katherine Malengo	Wildlife Biologist
Stephanie Valentine	Outdoor Recreation Planner
Tesa Villalobos	Archeologist

Federal, State and Local Agencies

Federal	State
Forest Service, Tongass National Forest	Alaska Department of Natural Resources
Bureau of Land Management, Alaska State Office	
Environmental Protection Agency	
Tribes	County
Ketchikan Indian Corporation	None
Metlakatla Indian Community	
Organized Village of Saxman	

Distribution of this Final SEIS

The Draft Supplemental Environmental Impact Statement (SEIS) was distributed to individuals who specifically request a copy of the document. A copy of this SEIS or a notice of availability of this SEIS will be sent to those who submitted comments during the review period for the Draft SEIS and to the federal agencies, federally recognized tribes, state and local governments, and organizations listed above.

List of Appendices

Appendix A	2009 Sensitive Species List
Appendix B	Comment Letters on the Draft SEIS

References

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Glossary

A

Anadromous fish

Fish which mature and spend much of their adult life in the ocean, returning to inland waters to spawn. Salmon and steelhead are examples.

ANILCA

The Alaska National Interest Lands Conservation Act of December 2, 1980. Public Law 96-487, 96th Congress, 94 Stat. 2371-2551.

B

Best Management Practices (BMP)

A suite of techniques that guide, or may be applied to, management actions to aid in achieving desired outcomes. Best management practices are often developed in conjunction with land use plans, but they are not considered a land use plan decision unless the land use plan specifies that they are mandatory. They may be updated or modified without a plan amendment if they are not mandatory.

E

Endangered Species

Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register.

Environmental Impact Statement (EIS)

A document prepared by a federal agency in which anticipated environmental effects of a planned course of action or development are evaluated. A federal statute (Section 102 of the National Environmental Policy Act of 1969) requires that such statements be prepared. It is prepared first in draft or review form, and then in a final form. An impact statement includes the following points: (1) the environmental impact of the proposed action, (2) any adverse impacts which cannot be avoided by the action, (3) the alternative courses of actions, (4) the relationships between local short-term use of the human environment and the maintenance and enhancement of long-term productivity, and (5) a description of the irreversible and irretrievable commitment of resources which would occur if the action were accomplished.

G

Geothermal plant

A plant in which the prime mover is a steam turbine. The turbine is driven either by steam produced from hot water or by natural steam that derives its energy from heat found in rocks or fluids at various depths beneath the surface of the Earth. The energy is extracted by drilling and/or pumping.

I

Inventoried Roadless Area

An undeveloped area typically exceeding 5,000 acres that meets the minimum criteria for Wilderness consideration under the Wilderness Act.

L

Lease Notice

A lease notice provides more detailed information concerning limitations that already exist in law, lease terms, regulations, or operational orders.

Lease stipulation

A condition of lease issuance that provides a level of protection for other resource values or land uses by restricting lease operations during certain times or locations or to avoid unacceptable impacts, to an extent greater than standard lease terms or regulations. A stipulation is an enforceable term of the lease contract, supersedes any inconsistent provisions of the standard lease form, and is attached to and made a part of the lease. Lease stipulations further implement the Bureau of Land Management's (BLM) regulatory authority to protect resources or resource values. Lease stipulations are developed through the land use planning process.

M

Mitigation Measures

An action to alleviate potential adverse effects of natural or human caused disturbances. For example, to lessen or minimize an adverse effect upon a cultural resource listed on or eligible for the National Register of Historic Places. The two categories of mitigation most often used for cultural resources are project modification and data recovery. Also to lessen or minimize an adverse effect upon a listed plant and animal species or on any resource.

N

No Surface Occupancy (NSO)

A fluid minerals leasing constraint that prohibits occupancy or disturbance on all or part of the lease surface to protect special values or uses. Lessees may exploit the fluid mineral resources under the leases restricted by this constraint through use of directional drilling from sites outside the NSO area.

Non-discretionary restriction

Not subject to or influenced by someone's discretion, judgment, or preference. Non-discretionary policies are ones that automatically happen. A non-discretionary law is one that is enforced absolutely, and not at the discretion of authorities.

R

Renewable energy

The term “renewable energy” means electric energy generated from solar, wind, biomass, landfill gas, ocean (including tidal, wave, current, and thermal), geothermal, municipal solid waste, or new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project.

Roadless Areas

Undeveloped areas typically exceeding 5,000 acres that meet the minimum criteria for wilderness consideration under the Wilderness Act and the planning regulations at 36 CFR 219.17 that were inventoried during the Forest Service’s Roadless Area Review and Evaluation (RARE II) process, subsequent assessments, or forest planning.

S

Stipulation

A condition of lease issuance that provides protection for other resource values or land uses by establishing authority for substantial delay or site changes or the denial of operations within the terms of the lease contract.

Subsistence uses

The customary and traditional uses by rural Alaska residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade. For the purposes of this section, the term -

**Supplemental
Environmental
Impact Statement
(SEIS)**

"family" means all persons related by blood, marriage, or adoption, or any person living within the household on a permanent basis; and "barter" means the exchange of fish or wildlife or their parts, taken for subsistence uses for other (a) fish or game or their parts; or (b) food or for nonedible items other than money if the exchange is of a limited and noncommercial nature.

A supplement to either a draft or final environmental impact statements when (a) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (b) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. A supplement may also be prepared when the agency determines that the purposes of the Act will be furthered by doing so. Shall adopt procedures for introducing a supplement into its formal administrative record, if such a record exists. Shall prepare, circulate, and file a supplement to a statement in the same fashion (exclusive of scoping) as a draft and final statement unless alternative procedures are approved by the Council. (40 CFR 1502.9(c))

T

**Threatened
species**

Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, and as further defined by the Endangered Species Act of 1973.

W

Watt

The electrical unit of power. The rate of energy transfer equivalent to 1 ampere flowing under a pressure of 1 volt at unity power factor.

Appendix A – 2009 Sensitive Species List

Table A-1. Forest Service Region 10 Sensitive Plant Species List (Revised 2009)

Common Name	Scientific Name	Status¹
Eschscholtz's little nightmare	<i>Aphragmus eschscholtzianus</i>	S
Spatulate moonwort	<i>Botrychium spathulatum</i>	Y
Moosewort fern	<i>Botrychium tunux</i>	Y
Moonwort fern, no common name	<i>Botrychium yaaxudakeit</i>	Y
Edible thistle	<i>Cirsium edule</i> var. <i>macounii</i>	Y
Mountain lady's slipper	<i>Cypripedium montanum</i>	Y
Large yellow lady's slipper	<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	Y
Calder's loveage	<i>Ligusticum calderi</i>	Y
Lichen, no common name	<i>Lobaria amplissima</i>	Y
Pale poppy	<i>Papaver alboroseum</i>	S
Alaska rein orchid	<i>Piperia unalascensis</i>	Y
Lesser round-leaved orchid	<i>Platanthera orbiculata</i>	Y
Kruckeberg's swordfern	<i>Polystichum kruckebergii</i>	Y
Unalaska mist-maid	<i>Romanzoffia unalaschensis</i>	Y
Henderson's checkermallow	<i>Sidalcea hendersonii</i>	Y
Dune tansy	<i>Tanacetum bipinnatum</i> subsp. <i>huronense</i>	Y

¹ Y indicates known occurrence and S indicates suspected occurrence on the Tongass National Forest.
Source: US Forest Service 2011

Table A-2. Forest Service Region 10 Sensitive Animal Species List (Revised 2009)

Common Name	Scientific Name	Status¹
Queen Charlotte goshawk	<i>Accipiter gentilis laingi</i>	Y
Kittlitz's Murrelet	<i>Brachyramphus brevirostris</i>	Y
Black oystercatcher	<i>Haematopus bachmani</i>	Y
Aleutian Tern	<i>Sterna aleutica</i>	Y

¹Y indicates known occurrence on the Tongass National Forest.
Source: US Forest Service 2011

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Appendix B – Comment Letters on the Draft SEIS

Commentor

Department of the Interior,
Office of Environmental Policy and Compliance
1689 C Street, Room 119
Anchorage, AK 99501-5126

United States Environmental Protection Agency Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

State of Alaska
Citizens' Advisory Commission on Federal Areas
3700 Airport Way
Fairbanks, AK 99709

Response to Draft SEIS

No comments to offer at this time

Assigned rating of Lack of Objection

Supports Alternative B, the Proposed Action

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United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1689 C Street, Room 119
Anchorage, Alaska 99501-5126



VIA ELECTRONIC MAIL, NO HARD COPY TO FOLLOW

9043.1
ER12/367
PEP/ANC

June 26, 2012

Mr. Forrest Cole, Forest Supervisor
Ketchikan-Misty Fiords National Monument
Tongass National Forest
ATTN: Bell Island Geothermal
3031 Tongass Avenue
Ketchikan, AK. 99901-5743

Subject: Comments on the Bell Island Geothermal Lease Draft Supplemental
Environmental Impact Statement, Tongass National Forest.

Dear Mr. Cole:

The U.S. Department of the Interior has reviewed the April 2012 Bell Island Geothermal Lease Draft Supplemental Environmental Impact Statement. We have no comments to offer at this time.

We appreciate the opportunity to provide comments.

Sincerely,

Pamela Bergmann
Regional Environmental Officer – Alaska



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

June 29, 2012

OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

RECEIVED
JUL 02 2012
Ketchikan-Misty Fiords
Ranger District

Sarah Samuelson, Tongass Minerals Group
Ketchikan-Misty Fiords Ranger District
Tongass National Forest
Attn: Bell Island Geothermal Lease
3031 Tongass Avenue
Ketchikan, Alaska 99901

Re: EPA Region 10 comments on the Bell Island Geothermal Lease Draft Supplemental Environmental Impact Statement, EPA Project # 07-026-BLM.

Dear Ms. Samuelson:

We have reviewed the US Forest Service's Bell Island Geothermal Lease Draft Supplemental Environmental Impact Statement. Our review of the EIS was conducted in accordance with our responsibilities under National Environmental Policy Act and Section 309 of the Clean Air Act.

We recognize that the supplemental EIS is narrowly focused on compliance actions and key resource concerns not previously analyzed, specifically impacts to the North Cleveland Inventoried Roadless Area (IRA) 529 and to subsistence, both of which were not considered for these particular lease sales in the original EIS. In addition, the EIS identifies the limitation of the IRA on the proposed action's development, namely the prohibition of road construction. Because roads cannot be constructed, and aerial access is not practical, development of geothermal resources could only occur on private land outside the National Forest System. As such, impacts to Forest Service resources would be indirect and minimal. Based on this analysis, we have assigned a rating of LO (Lack of Objections). A description of our rating is enclosed.

We look forward to reviewing subsequent analyses by the Bureau of Land Management should developable resources be identified in the future. If so, the concerns we identified in our scoping comments on June 23, 2011 would remain, namely, potential impacts associated with wastewater discharges, hazardous wastes, and fill of waters of the U.S.

Again, we appreciate the opportunity to provide comments on this project. If you would like to discuss these comments, please contact me at (206) 553-1601 or by email at reichgott.christine@epa.gov, or you may contact Jennifer Curtis of my staff in Anchorage at (907) 271-6324 or curtis.jennifer@epa.gov.

Sincerely,

A handwritten signature in dark ink, appearing to read "Christine B. Reichgott", is written over a light blue horizontal line.

Christine B. Reichgott, Manager
Environmental Review and Sediment Management Unit

**U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action***

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

STATE OF ALASKA

CITIZENS' ADVISORY COMMISSION ON FEDERAL AREAS

SEAN PARNELL,
Governor

3700 AIRPORT WAY
FAIRBANKS, ALASKA 99709

PHONE: (907) 374-3737

FAX: (907) 451-2751

July 2, 2012

Forrest Cole, Forest Supervisor, Tongass National Forest
C/O Ketchikan-Misty Fiord National Monument
Attn: Bell Island Geothermal
3031 Tongass Avenue
Ketchikan, Alaska 99901

Dear Mr. Cole;

The Citizens' Advisory Commission on Federal Areas (CACFA) has reviewed the *Bell Island Geothermal Leases Draft Supplemental Environmental Impact Statement (DSEIS)*. We offer the following comments for your consideration in reaching a decision on whether or not to consent to the leases in question being issued by the Bureau of Land Management (BLM).

As we stated in our June 24, 2011 scoping comments, the Commission is sensitive to the needs of rural Alaska and the growing expense of providing electrical power to Alaskan communities. We also stated our support for the development of alternative energy sources in Alaska, including geothermal, but took no position on the Bell Island lease proposal.

We do note that our previous concerns regarding the loss of public use of the Bell Island Hot Springs were unfounded, as the springs are not currently open for public use and the lease applicant is also the owner of the springs.

Based upon our review of the DSEIS, information in the *Final Programmatic EIS for Geothermal Leasing in the Western United States* (PEIS) and provisions in the 2008 *Tongass National Forest Land and Resources Management Plan* (Forest Plan) the Commission supports Alternative B, the proposed action, under which the Forest Service would consent to the pending lease applications on Bell Island.

Approval of the leases would be consistent with the forest-wide standards and guidelines in the Forest Plan which encourage the exploration, development and extraction of locatable and leasable minerals and energy resources. In addition, approval of the leases is consistent with the goals of the Energy Policy Act of 2005 and the PEIS, both of which also promote the development of renewable energy resources.

The Commission understands that any Forest Service consent to issuance of the leases by BLM is not the final step in the lease approval process. Additional site-specific National Environmental Policy Act (NEPA) analyses would be necessary once a plan of operations is submitted for exploration and development of the lease areas.

Because the proposed lease areas are located in the North Cleveland Inventoried Roadless Area (IRA), the recent decision which makes National Forest lands in Alaska subject to the Roadless Rule means that any affirmative consent determination will require final authorization by the Secretary of Agriculture.

However, the proposed lease acreage encompasses only 7.3 percent of the IRA, with development of the geothermal plant likely occurring on the private land on Bell Island. The Swan Lake to Tyee Lake Electrical Intertie is also located in the IRA in close proximity to the pending lease areas. As described in the SEIS, any additional impacts to the IRA resulting from the exploration, drilling and utilization of geothermal resources would be minimal and should not preclude the Secretary from authorizing the consent determination.

The Commission appreciates the opportunity to comment on this proposed action and encourage the Forest Service and the Secretary of Agriculture to consent to approval of the lease applications. Please maintain our contact information for future notifications. Please contact our office if there are questions about our comments.

Sincerely,



Stan Leaphart
Executive Director

Cc: Governor Sean Parnell
Senator Lisa Murkowski
Senator Mark Begich
Congressman Don Young
Secretary of Agriculture Tom Vilsack
Regional Forester Beth Pendleton

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